CIVIL WORKS IN THE ARMY

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The report concluded that the advantages to the Defense Department of retention of the civil mission far outweigh the disadvantages. History and the views of the survey respondents support the utility to the defense establishment of a construction organization-in-being, of the training value of civil assignments and of the grass roots contacts of the Corps' civil efforts. Further, the advantages accruing to the nation from the competence and integrity of the Corps militate against any precipitate transfer of civil functions from the Army.

USAWC MILITARY RESEARCH PROGRAM PAPER

CIVIL WORKS IN THE ARMY?

AN INDIVIDUAL RESEARCH REPORT

by

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Corps of Engineers

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10 June 1974

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This paper was prepared under
the Cooperative Degree Program of the
USAWC and the Pennsylvania State University.

PREFACE

There are many critics of the US Army Corps of Engineers and few words written in its defense. As a career officer in the Corps, I was anxious to "see for myself" the various sides of this polygonal story and to attempt to document this story for any colleagues who may have had similar desires to better understand the foundation upon which the Corps stands.

I would like to acknowledge the invaluable help I received from so many people during the course of the study. I would especially like to thank Colonel Richard Leonard, my USAWC research advisor; Dr. Dan Poore, my Pennsylvania State University advisor; Colonel Niven Baird, my USAWC faculty advisor; and Dr. Don Penner and Captain Darryl Steiner of the USAWC faculty for their advice and assistance. I am also indebted to MG John Morris, Director of Civil Works, Office of the Chief of Engineers and Mr. B. J. Tofani of the same office for opening to me all the doors within the Corps' organization. A full understanding of the complexity of the issue would have been impossible to achieve without the time and patience of the some 200 people with whom I discussed the Corps and in particular, the Division and District Engineers with whom I discussed the Corps, Dr. Arthur Maass, the Honorable Robert Moses, and Admiral Ben Moreell.

I am most grateful for the outstanding administrative support of Mr. Al Fausnacht's USAWC reproduction division, Miss Joyce Kovach and her intrepid band of typists and Miss Ruth Longhenry and the members of the USAWC Library Staff.

Most of all I am grateful for the assistance and patience of my wonderful family, who became integral parts of the study effort.

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CHAPTER I

CIVIL WORKS IN THE ARMY?

"Why should our military establishment be right in the middle of our nation's public works efforts? It is bound to be inefficient to have public works scattered throughout the federal bureaucracy. Get dam building out of the Army!" Words like these are not new. They date back to the 1880s when civilian engineers attempted to secure legislation to transfer the civil works functions of the US Army Corps of Engineers to some other agency of the federal government. A joint committee of the Congress examined the same subject in 1921, and again in 1928, during Coolidge's administration, Congress took another look at this unique mix of civil-military roles. Major recommendations were made by various groups in 1932, 1937, 1949, 1953, 1966, and as late as 1970 to shift this public works effort out of the hands of the military.[1] And the cries continue!

THE ISSUES

To date, each recommendation for transfer of Corps of Engineers' civil functions has been met by strong opposition from the defense establishment, which ties the value of the Corps civil works efforts closely to national security. Other opponents of reorganization point to the value to the nation of the experience and traditions of the Corps of Engineers.

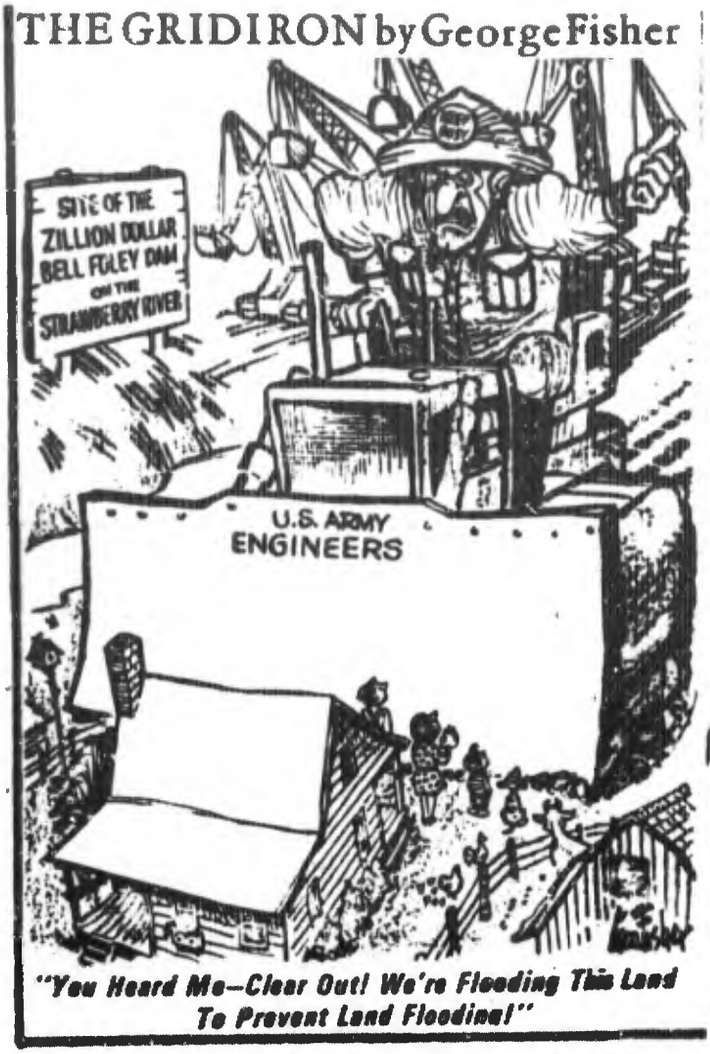
Proponents of transfer, on the other hand, ridicule the national security aspects of continuing Corps civil efforts, and point to the

inefficiencies which must exist in a federal organization where over 25 federal activities have a role in policy development or project execution. A few proponents are even more concerned by the mere presence of an "autocratic" military organization in the civilian environment. (See Figure 1.)

RESEARCH OUTLINE

The primary purpose of this report is to examine the soundness of the Department of Defense's (DOD) stated and implied rationale for retention of the civil works mission in the DOD. Allied with this examination is a brief discussion and review of the advantages and disadvantages to the nation, as opposed to the DOD, of maintaining the Corps in the civil works effort.

This report is based on a detailed review of the literature on the subject--books, magazine articles, Congressional and military studies and reports, and the reports of special commissions and boards. The examination of the literature was supplemented heavily by correspondence and interviews with retired military officers from within and without the Corps, key personnel from the two Hoover Commissions, distinguished educators and their students at 10 colleges, private citizens and over 100 active members of the Corps of Engineers--military and civilian. To fill gaps in the literature, a survey was conducted, by mail, of some 41 senior (mostly retired) Corps of Engineer officers to gather information on their perceptions of the value of their civil works experience to their later strictly military service.



(By permission of the Arkansas Gazette)

FIGURE 1

The research was directed towards developing the advantages and disadvantages, primarily to the DOD but also to the nation, of the retention of the civil works mission in the Army.

Following this introductory chapter, Chapter II addresses the history, organization, and functions of the Corps of Engineers, as a background for the evaluation of advantages and disadvantages. Chapter III details some of the rationale used by critics of the Corps or supporters of reorganization in their efforts to obtain this reorganization. Chapter IV provides an analysis of the advantages and disadvantages to DOD of maintaining the status quo and Chapter V provides a similar, but less detailed, assessment of this advantage/disadvantage ratio as it applies on a national scale. Chapter VI provides a comments, conclusions, and challenges to the Corps of Engineers. Detailed information on the survey questionnaire is provided in Appendix A to the report.

CHAPTER I

FOOTNOTES

1. US Department of the Army, "Corps of Engineers Functions and the National Interest," (Washington, Office of the Chief of Engineers, April 1953), pp. 44-46 and Appendix C.

CHAPTER II

THE LAY OF THE LAND

HISTORY OF THE ARMY CORPS OF ENGINEERS[1]

The saga of the Army Corps of Engineers begins with the American Revolution when, under George Washington, military engineers provided the essential breastworks and fortifications for the Continental Armies. Following the Revolution, Washington continued the Corps and recommended the establishment, under the engineers, of the US Military Academy at West Point. West Point became the nation's first engineering college and its graduates moved on to play major roles in founding our early civilian engineering institutions. Many West Point graduates, as members of the Corps, provided much of the impetus for the westward explorations of the 19th Century. Roads, railroads, navigable waterways, harbors, and canals were surveyed and often built by Army engineers. By the start of the Civil War, these men had marched to the Pacific, opened new East Coast harbors, and begun development of the Great Lakes navigation system.

Following the Civil War, in which engineer officers such as Lee, Beauregard, Meade, Fremont, and McClellan played major military roles, the Corps began its herculean efforts to protect the lower Mississippi from disastrous flooding. This task began the construction of the present extensive levee system. In 1899, the Chief of Engineers was directed by the Congress to place strict control over use of navigable waterways. This action was closely followed by Presidential

direction for the engineer General Goethals to complete and operate the Panama Canal.

Following World War I, during which the Army engineers focused their effort on support of the war effort at home and abroad, the Congress began to direct greater attention on the development of the nation's water resources. In 1936, the Corps was given national responsibility for flood control and was authorized to carry out comprehensive surveys involving the navigation, flood control, and irrigation uses of the nation's water resources. As a result, great multipurpose dams such as Bonneville and Fort Peck were built prior to World War II.

According to General MacArthur, World War II was an "Engineers War" and Army engineers played major roles in amphibious operations, base development, and combat engineer support. At home, Corps construction skills transformed open plains into Army camps for the mobilizing forces and, in a special project, the Manhattan Engineer District managed the development of the first atom bomb.

Following World War II, the Corps turned again to comprehensive river basin development, building great dams on the Missouri, the Arkansas, and the Columbia, constructing the St. Lawrence Seaway and canalizing the Ohio River. At the same time it was supporting war efforts--first in Korea and then in Vietnam. In the fifties, it was transforming the sands of Cape Canaveral into a missile center for NASA. In the early sixties it was constructing Intercontinental Ballistic Missile launch sites across the land. And, in 1970, the Corps took on the mission of serving as construction agent for the US Postal Service.

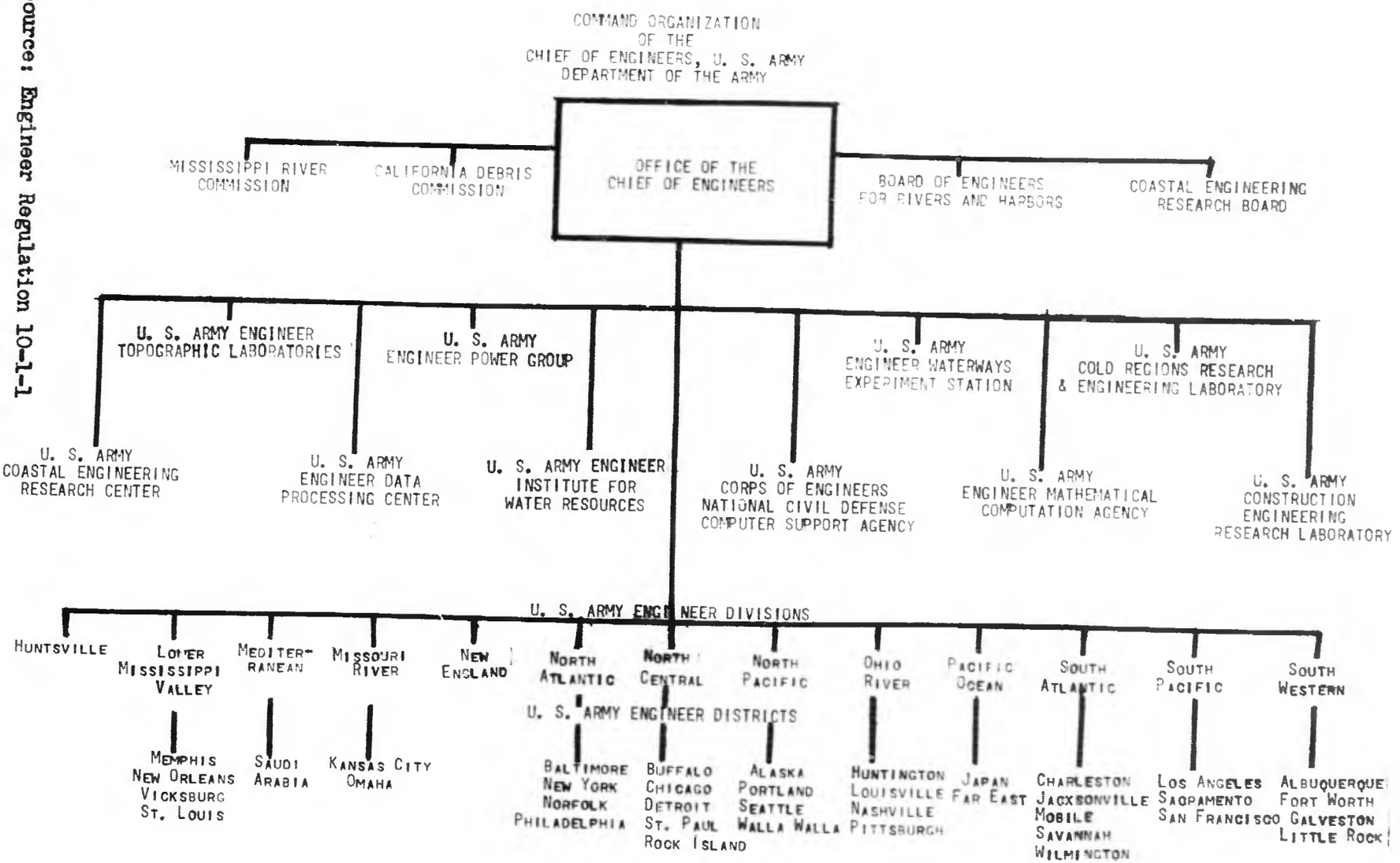
Since its inception, the Corps of Engineers has completed over 3,300 Civil Works projects at a cost of over $11 billion. Its Fiscal Year 1975 budget request sought over $1.6 billion for current Civil Works projects and nearly $.75 billion for military construction.[2] The value returned from these projects cannot be finitely measured, however, during the 1973 Mississippi River floods, Corps projects allegedly returned $4 in flood damage prevention for every $1 that had been expended for flood control.[3]

ORGANIZATION

The Corps of Engineers is the branch of the US Army charged with providing combat and construction engineering support for the Army, and as directed, construction support for other programs of the government.[4] Members of the Corps of Engineers include officers and enlisted men serving in Engineer Troop Units, officers on branch immaterial assignment and officers and enlisted men serving in the organization of the Chief of Engineers (Figure 2). Over time, however, outside the Army, the organization of the Chief of Engineers, which has both military and civil engineering functions, has become synonomous with the Corps of Engineers. For the purposes of this report, whenever the term Corps or Corps of Engineers is used, it will refer to this organization of the Chief of Engineers.

The mission of the Corps of Engineers is carried out by a headquarters organization in Washington, and a field organization of 13 engineer divisions (supervisory in nature), 39 districts (operational in nature), and various research activities (Figure 3).

FIGURE 2



Source: Engineer Regulation 10-1-1

FIGURE 3

The divisions and districts are geographically distributed (Figure 4) within the United States and abroad. While most all are involved in civil works, only 10 Divisions and 11 Districts are engaged in military construction as well. Divisions are normally commanded by General Officers and Districts by Colonels.

To staff this organization, the Chief of Engineers is authorized approximately 500 military officers and over 40,000 civilians. Approximately 80% of these people are in the civil works business. Since the Corps does the majority of its own design and then contracts for the actual construction, the great bulk of the Corps civilians are professionals engaged in planning, design, or actual supervision of construction.

MISSIONS

By various statutes and Congressional authorizations, the Corps of Engineers is responsible today, in the civil works area, for:

--developing plans for water and related land resources development possibilities and performing comprehensive river basin planning.

--planning, designing, constructing, operating, and maintaining projects authorized by Congress.

--administering the laws pertaining to the protection and preservation of the navigable waters of the United States.[5]

In the military arena, the Corps is responsible for:

--planning, designing, and constructing military projects for the US Army and, on a geographic basis, the US Air Force.

--directing the Army's real property maintenance program.

FIGURE 4

--Army environmental preservation and improvement activities.

The Chief of Engineers also serves as the principal advisor to the Army Chief of Staff on engineer matters.[6]

THE NATIONAL WATER RESOURCE ORGANIZATION

The Corps civil works activity is only part of a much larger national water resource development effort which involves many other elements of the government (Figure 5). Corps actions, as a result, are influenced in many ways by these other agencies. Water resource policy emmanates from the Water Resources Council (WRC).

From the Executive Office of the President, the Office of Management and Budget (OMB) establishes fiscal policies for executing water resource activities.

Guidance from OMB and the WRC is then blended with existing statutes, e.g., the National Environmental Policy Act (NEPA), and the results applied to project development by the several agencies engaged in water resource development. Congress, as the appropriator of funds and as the general watchdog of executive activities, also influences water resource activities.

While the Corps is the largest of the federal water resource development activities it is still only one of the agents in this field and its efforts must be carefully coordinated with the other agencies.

CHAPTER II

FOOTNOTES

1. Emerson C. Itschner, The Army Engineer's Contribution to American Defense and Advancement, (New York: The Newcomen Society, 1959).

2. US House of Representatives, Hearings Before Subcommittee of the Committee on Appropriations, Public Works, Appropriations Bill 1975, Ninety-third Congress, (Washington, GPO, 1974), pp. 3-33.

3. US Department of the Army. "Engineer Command Briefing" unpublished paper, (Washington, Office, Chief of Engineers, June 1973), pp. 24-28.

4. US Department of the Army, Mission and Command Organization of the Chief of Engineers, Regulation No. 10-1-1, (Washington, Office, Chief of Engineers, 9 March 1973), pp. 1-2.

5. Ibid.

6. Ibid.

CHAPTER III

THE ARMY SHOULDN'T BE IN CIVIL WORKS!

Ever since the 1880s, critics of the Corps of Engineers have echoed the cry, "The Army shouldn't be in civil works!" The purpose of this chapter is to outline some of the more common and more recent post-World War II criticisms of the Corps' role in the public works efforts of the nation. Counter-arguments will be presented in succeeding chapters.

HOOVER I--1949

Chartered by the Congress at the behest of the President, the Commission on Organization of the Executive Branch of the Government--the first Hoover Commission--spent nearly two years examining the operations of the federal bureaucracy. In its concluding report the Commission recommended that "to remove major areas of overlap and duplication," the flood control and rivers and harbors missions of the Corps of Engineers should be transferred to the Department of the Interior.[1]

Hoover's Natural Resources Task Force, headed by former Governor of Wyoming, Leslie A. Miller, and led by a young staffer from Harvard, Arthur Maass, was more blunt. It recommended transfer of civil works to Interior and noted:

> The Army simply is not adapted to perform this new role . . . assignment of flood control responsibilities to the Army has gotten it deeply involved in multiple-purpose projects far transcending in social and economic

> significance its historic rivers and harbors role . . . Arguments against transferring river development functions from the Corps of Engineers are not impressive.[2]

Robert Moses, then Chairman of the New York State Council of Parks (among many other things), headed Hoover's Task Force on Public Works, which recommended transfer of the Corps' civil works functions to a Department of Works--in the interest of economy and efficiency. Moses, who personally authored his report, saw that:

> The Army Engineers continue to control part of the rivers and harbors and flood control spheres at a time when reclamation in the broad sense, power development, and other phases of engineering work involving rivers and harbors should be part of the same program . . . The argument that river and harbor work can be directed only by the Army Engineers becomes . . . absurd when it is realized that less than 200 Army Engineers are involved and that the remainder of the personnel under their control, numbering over 30,000, are civilians who supply most of the detailed knowledge . . . The subject is far too important to be approached from the point of view of old-school tie tradition.[3]

President Hoover clearly supported the shift of Corps functions out of the Army and into some other agency.[4] However, his efforts in this and several other areas ran into heavy opposition in the Congress, and the proposal to transfer the Corps' civil functions was shelved.

Post-Hoover I

Disappointed by the heavy opposition to transfer of the Corps, Miller and Maass continued to put their views before the public. In a scathing article in the Saturday Evening Post, Miller demanded the transfer of the Corps, which he contended "has extended its power and influence into many fields of civilian service . . . often arrogantly

ignoring . . . the expressed wishes of the Commander-in-Chief."[5] Maass, in his book Muddy Waters, evaluated the civil works program of the Corps. The tone of Muddy Waters was set by Harold Ickes' introduction:

> No more lawless or irresponsible federal group than the Corps of Army Engineers has ever attempted to operate in the United States . . . Nothing could be worse for the country than this willful and expensive Corps of Army Engineers . . .[6]

HOOVER I--1955

In 1953 President Hoover was again called upon to examine the organization of the Executive Branch and again chose to look into the field of water resource development. This time, however, neither the Commission nor its Task Force on Water Resources and Power, headed by Admiral Ben Moreel, Chairman of the Board of Jones and Laughlin Steel Corporation, and an adviser to the Moses Task Force, recommended transfer of any Corps functions. However, the Commission did recommend transfer of certain Soil Conservation Service dam-related functions to the Corps.[7] In a report accompanying the Moreel Task Force report, a Task Force consultant, Professor Albert L. Sturm, then of the University of West Virginia, spoke out strongly for transfer of the Army's civil functions to some other agency and questioned the Army's statements that the Corps of Engineers civil mission was closely tied to nation security:

> . . . The Army has not shown that an equally or even more effective arrangement could not be devised which would serve both civil and military needs . . . Very few officers proportionately receive leadership experience in civil works, and their technical training

> for wartime military engineering is practically negligible . . . If justification is to be found for retention of . . . civil functions, it must be on grounds other than national security.[8]

While the Task Force saw some merit in Sturm's views, it did not feel that the overall benefits of any transfer would outweigh the administrative turmoil that would accompany any major reorganization. The Task Force indicated that the Corps was doing as well if not better than Interior.[9]

THE MOSS BILLS

In 1965 and 1967 Senator Frank Moss of Washington introduced legislation to create a Department of Natural Resources, a department that would assume the civil works missions of the Corps:

> Most water resource project construction and management . . . is carried out by the US Army Corps of Engineers . . . the responsibility of the Corps in this field "just growed" . . . Except for a few uniformed officers, the work of the Corps in the water resources field is carried out by civilian engineering personnel . . . What is called for is a reorganization of the executive branch to bring all major resource management functions into one department.[10]

Senator Moss in a letter to the Chief of Engineers added:

> On the question of the contribution of the civil works program to the nation's military strength, I would point out that . . . under another department these civilian engineers would be doing just what they are now doing. In time of national emergency they would be available for use by the Department of Defense just as they are today . . .[11]

Senator Moss' bills found few supporters in a Congress more concerned with other domestic issues and the Vietnam War.

THE NIXON ADMINISTRATION

In 1970, Secretary of the Interior Walter Hickel, during the nation's turn of the decade focus on the environment, proposed that the Army Engineers be placed under the Department of the Interior to facilitate a coordinated approach to protecting the nation's natural environment.[12] His plan was immediately supported by the Washington Post, which noted that the recommendation was ". . . in line with the growing demand for restoration of a healthful environment."[13]

President Nixon took no immediate action on Hickel's recommendation but did, in March 1971, submit to the Congress his plan for creation of a Department of Natural Resources, with responsibility for all civil works activities. However, as OMB noted:

> The bill provides that the construction and operation of civil works, the provision of aid in flood and coastal emergencies, and related activities so transferred would continue to be accomplished through and directed by the Secretary of the Army and the Corps of Engineers.[14]

In effect the Nixon plan, which is still before the Congress, transfers to the new department all of the Corps' civil responsibilities and then "loans" the Corps all but certain national planning and budgeting functions.

CURRENT CRITICS

The most vocal of today's critics of a military run civil works program is Martin Heuvelmans, citizen, author of the River Killers. Heuvelmans devotes an entire chapter of his book to "Abolish the Corps," citing the insensitivity of this military machine to the environment:

> For the growing masses concerned with saving outdoor America, there is only one positive answer: completely abolish the Civil Works Branch of the Army Corps of Engineers.[15]

The aging Arthur Morgan, first Chairman of the TVA and long-time Corps critic, in Dams and Other Disasters leveled his guns at the training of the Army Engineer:

> The Corps of Engineers is a product of the West Point Military Academy . . . The limitations of West Point education are reflected again and again in the extreme inadequacy of certain civilian works of the Corps of Engineers . . . the training of the Corps of Engineers is of a kind unsuited for civil engineering needs . . . West Point [military] traits are almost diametrically opposite to those required in large-scale civil engineering . . .[16]

University of Pennsylvania planner, Ian McHarg, joins with Morgan in deploring the military-civil relationship.

> The basic problem with the Corps is that it is understandably authoritarian. This is appropriate as an aspect of the Army. It is quite inappropriate as an agency involved in the nonmilitary conduct of human affairs . . . You clearly require two entirely different types of engineers--military engineers who can fill the Army role and entirely different persons who can deal with the civilian role . . .[17]

Writer Elizabeth Drew's "Dam Outrage" in Atlantic indicates that:

> The military patina gives the Corps its professional aura, its local popularity, its political success, and its independence . . . Actually, the military men in the civil works section of the Corps represent only a thin superstructure over a large civilian bureaucracy . . . The Corps' civil works section is neither of great interest to the Pentagon nor answerable to more relevant civilian bureaucracies.[18]

Drew sees little value in the presence of civil works within the defense structure.

Outdoorsman George Laycock in The Diligent Destroyers questions the implication that by maintaining the Corps in civil works the nation is somehow helping to keep up its defenses:

> At any given moment in peacetime the civil works program has two hundred or fewer Army officers . . . neither has it been fully explained how a colonel supervising . . . the construction of a dam . . . in Kentucky is gaining combat experience, except perhaps in skirmishes with the conservation forces.[19]

Army Officers

Perhaps the most worrisome criticism of the Corps civil works program comes from within the ranks of the Army. Discussions with over 30 mid-career Lieutenant Colonels and Colonels (non-Engineer) attending the Army War College (the defense system's senior service school level) indicate that none have any clear perception of how the civil works program functions, or, more importantly, of what value it is to the Army as a whole. Most looked on civil works duty as a place to which certain of their Engineer contemporaries disappear occasionally for an interesting--but nonmilitary connected--assignment. A number even felt that in the absence of any obvious tangible return to the Army, the Army might better employ these Engineer officers on "pure" Army missions.

SUMMARY

The cries to keep the Army out of civil works have been frequent and varied. Many critics point to efficiencies and economies that could be obtained by consolidation at the federal level of all public works functions. Others see the presence of the military in a civil

environment to be at least unwise, if not unsound. Critics from within and without either question or fail to see the national defense implications in having the Corps civil works mission transferred out of the Department of Defense.

CHAPTER III

FOOTNOTES

1. US Commission on Organization of the Executive Branch of Government, Concluding Report, (Washington, GPO, May 1949), p. 43.

2. Leslie A. Miller, et. al., Task Force Report on Natural Resources, (Washington, GPO, 1949), p. 65.

3. Robert Moses, Task Force Report on Public Works, (Washington, GPO, January 1949), pp. 12-13.

4. Interview with Robert Moses, New York City, 10 April 1974 and Admiral Ben Moreel, Pittsburg, 9 April 1974.

5. Leslie A. Miller, "The Battle that Squanders Billions," The Saturday Evening Post, May 14, 1949.

6. Arthur A. Maass, Muddy Waters (Cambridge: Harvard University Press, 1951), p. XIV.

7. US Commission on Organization of the Executive Branch of Government, Water Resources and Power (Washington, GPO, June 1955), p. 71.

8. Albert L. Sturm, "Civil Functions of Corps of Engineers Relation to Military Mission," in Report on Water Resources and Power, III Commission on Organization of the Executive Branch of Government, (Washington, GPO, June 1955), p. 1556.

9. Moreel Interview.

10. Frank Moss, Congressional Record, 89th Congress, 1st Session (1966), III, No. 119, S1A92A.

11. Letter from Senator Frank Moss to LTG W. F. Cassidy, November 19, 1965, p. 2.

12. George C. Wilson, "Hickel Asks Shift of Army Engineers," Washington Post, February 20, 1970, p. A-2.

13. Editorial, "The Anomalous Army Engineers," Washington Post, February 22, 1970, p. D-6.

14. US Executive Office of the President, Papers Relating to the President's Departmental Reorganization Program, (Washington, GPO, February 1972), p. 169.

15. Martin Heuvelmans, River Killers, (Harrisburg: Stackpole, 1973), p. 183.

16. Arthur Morgan, Dams and Other Disasters, (Boston: Porter Sargent, 1971), pp. 3, XXIII.

17. Letter from McMarg to the author, February 13, 1974.

18. Elizabeth Drew, "Dam Outrage," Atlantic, April 1970, p. 53.

19. George Laycock, The Dilligent Destroyers, (Garden City: Doubleday and Company, Inc.), p. 194.

CHAPTER IV

DOD--WE NEED THE CORPS!

This chapter discusses, in detail, the basic arguments, from a Department of Defense (DOD) standpoint, for retention of the civil works function in the Corps of Engineers. First the DOD's previously stated and implied reasons for retaining this function will be examined and then, some of the 'costs' to the DOD of maintaining this civil works effort will be reviewed.

THE DOD POSITION

There is no one document that expresses the DOD (or Army) position on retention of the civil works mission. Over the years, several reports have either directly or obliquely discussed this subject but none are current. Key DOD officials have written on the subject and have testified before the Congress--but again none of these statements are current. Therefore, this chapter will focus on assembling and then evaluating what most probably would be the DOD rationale today.

Basically, the advantages accruing to the DOD as a result of having the civil works mission in the Army Corps of Engineers are:

--Provision of an organization-in-being to support rapid mobilization by the Armed Forces prior to or in the event of war.

--Provision of a vehicle for the training of key engineer leaders in the large scale types of construction and related logistics efforts encountered in modern and sophisticated war.

--Efficiencies and economies in the conduct of the Army and Air Force Military Construction programs deriving from the use of the basic civil works field organization as a framework for military construction activities.

--Improvement in the image of the Army as a whole by the grass roots activities of the Corps and the concurrent officer and enlisted recruitment advantages accruing to the Army as a result.

THE ORGANIZATION-IN-BEING

US Defense Policy places heavy reliance on rapid mobilization of forces rather than on maintenance of a large standing defense establishment. During the period 1969 to 1974, in response to the ending of the Vietnam War, the size of the US Army was cut nearly in half from over 1.5 million to less than 780,000 men. With this cutback came base closings, consolidations, and a general retrenchment in the facilities required to support active forces.[1]

Major conflicts in Europe or the Far East or limited war actions of the Vietnam nature would require an expansion of the myriad of facilities needed by a modern armed force.

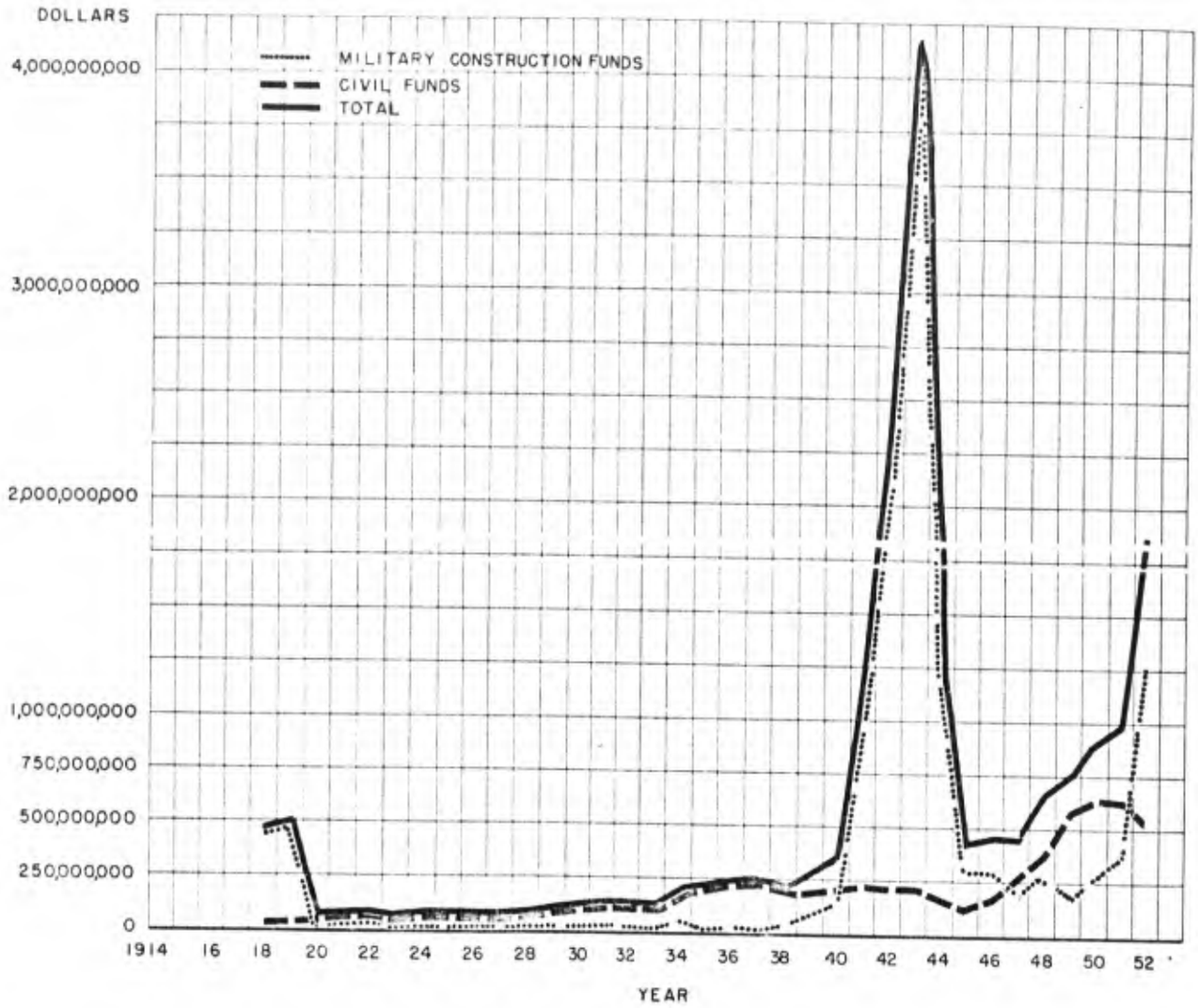
The DOD contends that the existence of the Corps of Engineers' nationwide construction organization--which is 75% civil and 25% military in its workload provides just the organization-in-being to support rapid expansion prior to or during mobilization.

At the start of World War II the Quartermaster Corps was responsible for all military construction in the Continental United States (CONUS). The load on the Quartermaster Corps was considerably

more than it could handle and the mission of military construction was transferred to the Corps, which put its in-being organization immediately to work. Engineers put down plans for dams and shifted their focus to barracks, bases, and logistics facilities. (Figure 5 illustrates the changing workload of this period). Staffed with experienced engineers and administrators, led by military personnel attune to the missions and thoroughly familiar with US civilian manpower and material resource availability, the Corps' divisions and districts were able to meet the challenge of short time schedules and on the job planning and design, completing $2.5 billion in construction in the first 18 months of the war and over $10 billion in the first four years. Concurrent with its more normal construction efforts, these same districts provided the nucleus for the Manhattan Engineer District which managed the development of the atom bomb.[2]

The same explosive buildup took place at the start of the Korean War and again the decentralized Corps organization was able to shift major effort almost overnight from civil to military construction.[3] (See Figure 5.)

The sudden advent of the Intercontinental Ballistic Missile (ICBM) provided another test for the expandability of the Corps. In August 1960, the Corps of Engineers Ballistic Missile Construction Office (CEBMCO) was established from assets of the Corps' organization to provide all construction for test, training, and operation of the nation's ICBM effort. This $2 billion effort involving work in 17 states superimposed the CEBMCO organization over the normal district/division setup in a unique but highly successful project management innovation.[4]



FUNDS

Source: Corps of Engineers Functions and the National Interest, Vol II

FIGURE 5

A similar rapid buildup was required in the late sixties with the advent of the Anti-ballistic Missile (ABM) Defense effort. The Huntsville Engineer Division was rapidly created and field work began using Corps personnel from districts around the country. After the first ABM site was well underway, the ABM limitations of the Strategic Arms Limitation Talks (SALT-I) curtailed long-term US effort in this and precipitated a rapid drawdown in the size of the ABM construction effort.[5]

This same in-being organization has also provided a base for mobilization of defense construction efforts abroad.

The combination of the attainment by the Soviets of a nuclear capability and the advent of the Korean War forced the US in the summer of 1950 to immediately seek overseas bases for its strategic air forces. The Corps was directed to build five large airfields in Morocco and to have them at a minimum state of readiness within six months. An engineer district was immediately formed in Morocco, drawing heavily on both military and civilian civil works assets. Through tight schedules, construction short-cuts and the leadership provided by immediate presence of the district organization in Morocco, the six month deadline was met--in fact the first military plane landed at Sidi-Slimane 63 days after the district was cleared into Morocco.[6]

To the north at approximately the same time, another new district, also drawing its talent from the Corps' total organization, was directed to and successfully completed construction of Thule Air Base in Greenland--within less than a year.[7]

Another aspect of the in-being organization often cited by the Army are the close ties that exist between the civilians and officers of the Corps, and the remainder of the Army. Periodic work on military projects, liaison between the districts and Army posts on planning matters and general opportunities to learn about the military in the course of dealing with district military personnel gives district personnel a unique ability to jump into the military situation at a moment's notice and to feel comfortable in so doing.[8]

Alternatives

Suggestions have been made that the Corps, if it lost its civil works mission, could rely on the military construction organization to provide this in-being expansion base.

The DOD takes issue with both of these ideas. DOD notes that the size of the military construction program is so variable (e.g., from $250,000,000 in 1948 to $1,250,000,000 in 1952)[9] that it could not provide a steady base from which to operate. The focus of the program also shifts around the country with transfers of military forces. A major construction effort for a few years in the Northeast might complete military construction work in that area for several years.

DOD sees that having a civilian organization on "stand-by" for military duty is also frought with problems. It would be difficult for that organization to detach itself from a totally civilian program on a timely basis to assume military roles. The agency would also have been operating without any frequent and necessary contact with the military establishment--its plans, policies, and intentions.[10]

Survey Evaluation

As indicated in Appendix A, the officers selected to complete the survey included those former members of the Corps who had had positions of great responsibility during either World War II, the Korean War, or the Vietnam War, or all three. All but two of the officers are now retired and all but one served as general officers while on active duty. Most had one or more important jobs outside of the Corps of Engineers.

Two questions in the survey addressed the value of the ties that existed between the Corps organization and the remainder of the Army during mobilization. One question of these addressed World War II, the other, the Korean War. Of the 33 officers who had experience in World War II, 84% of the respondents indicated that the ties made a major contribution to the nations rapid mobilization capability. The remainder indicated some or greater than some contribution (see Figure 6). The 21 officers with service during the Korean War responded at almost the same rate (see Figure 7). As a group these officers overwhelmingly felt that the relationship established over the years between the Corps' organization and the rest of the Army were of great value to the mobilization potential of the Army. (see Appendix A-Inclosure 5.)

In notes accompanying the questionnaires, the respondents provided their reasons for assigning great value to these ties. General Lucius Clay, former Military Governor of Germany, indicated that "engineering organizations with basic Army ties were available for immediate expansion." Major General Ewart Plank, who viewed the expansion as a "customer" found that:

5. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

1 /__/-------2 /__/-------3 /__/-------4 /__/-------5 /__/ 6 /__/

Major Contribution | Some Contribution | No Contribution | No Comment

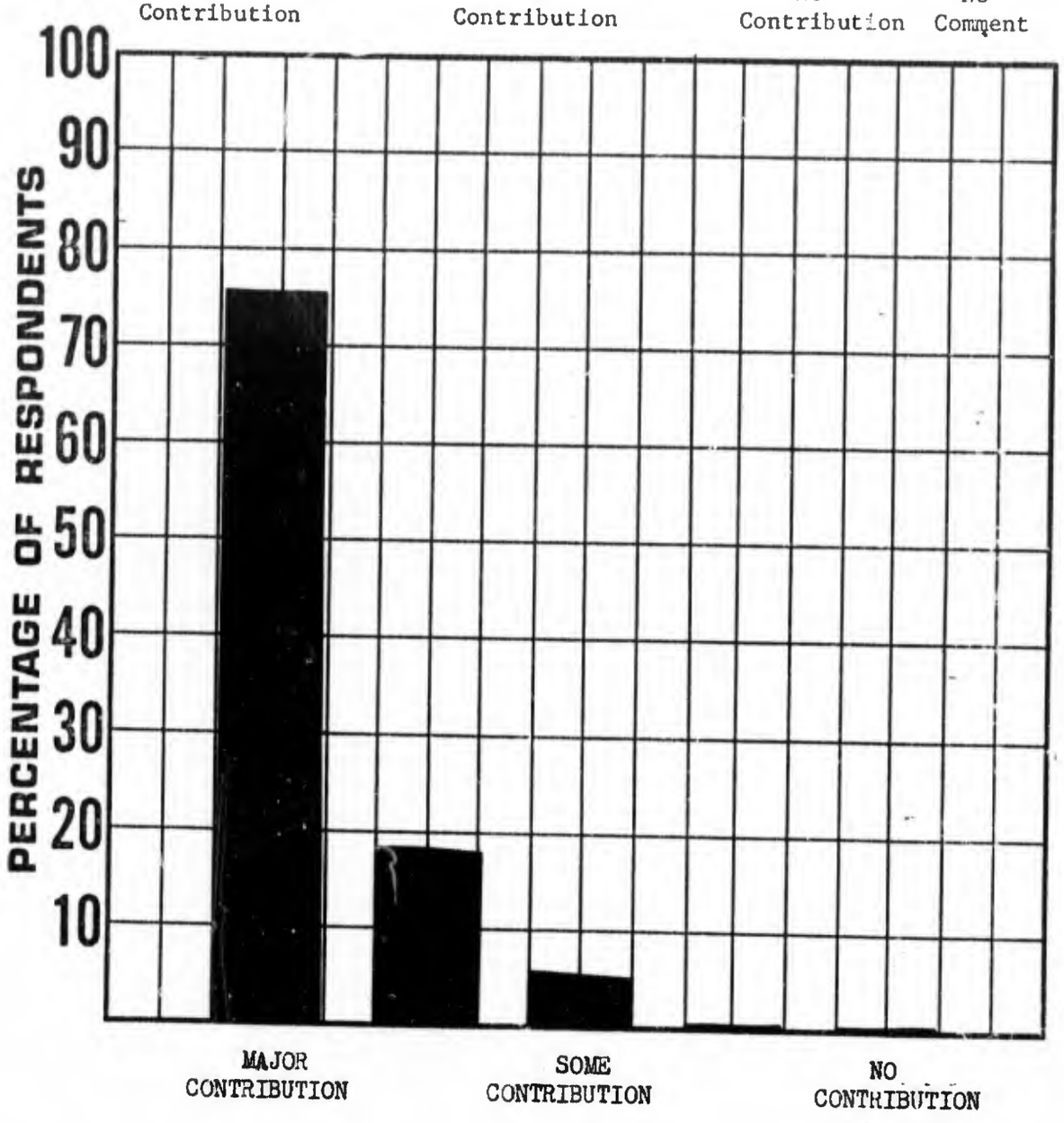


FIGURE 6

WORLD WAR II

6. In your opinion, did the ties that existed between the Corps districts and divisions and the remainder of the Army facilitate construction of the Continental United States mobilization base?

1	2	3	4	5	6
Major Contribution		Some Contribution		No Contribution	Don't know

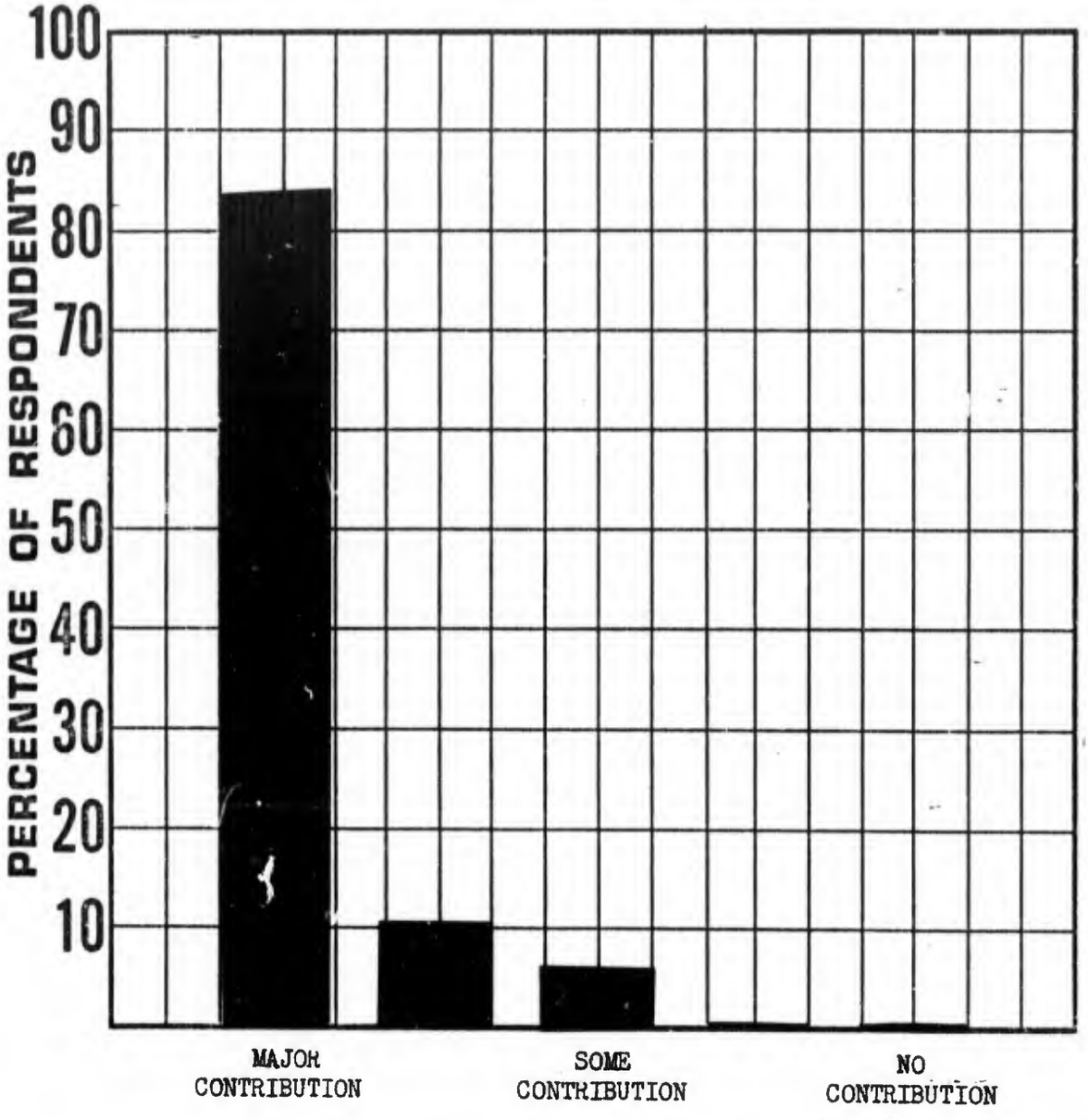


FIGURE 7

> District and Division Engineer Organizations, by their carefully planned distribution, provided 'on the ground' timely coordination with user organizations to effect modification in plans schedules and other vital matters; this enhanced cooperation and understanding saved precious time and materially bettered the end product.

Brigadier General Kenneth Fields, another "customer," found that the district organizations were "overnight in full swing and to study 'how to do it' was not necessary." Major General Paul Yount, a former Chief of Army Transportation, found that the district's edge derived from an "ability to understand military requirements both as to facilities and time phasing and to interpret them for civilian contractors."

Those with Korean experience found much the same thing. Lieutenant General (LTG), James B. Lampert, who eventually became US High Commissioner of Olinawa, was assigned to the Tulsa District and found the "major district effort was smoothly swung from civil to military construction." LTG W. K. Wilson, who later served as Chief of Engineers, sent people from his Mobile District to support the previously mentioned overseas efforts. The ties "permitted instant application of major effort from experienced, knowledgeable personnel and organizations. . . ." MG W. A. Carter, who was serving in the Pentagon, found the advantages of these ties were evident "when we had to reactivate the closed stations at the beginning of the war."

Overall, as might be expected, those officers who participated in the US mobilization efforts either as engineers or customers saw considerable value in the Corps' organization in-being. Instant

start-up, close previous liaison, and expansion capabilities provided the major attributes of this arrangement.

TRAINING FOR WARTIME

Perhaps the most well known of DOD's reasons for wanting to retain the Civil Works Mission in the Army is DOD's belief that the Civil Works Program:

> provides an opportunity for the experience and training of engineer and logistics officers in planning, constructing, and managing large and complex projects that would not otherwise be available in the normal peacetime situations.[11]

Proponents of the training benefits of civil works cite several reasons for the utility of such training.

--The planning process in major civil works construction is the same as that for major wartime engineering. Experience gained in data gathering, identification of needs, evaluating resources, considering alternatives, and determining courses of action is directly applicable to the military effects.[12]

—Experience gained in actual construction is also directly transferable to wartime situations for the techniques used in development of requirements for manpower and materiel, be it for a dam or a port, are the same.

--Experienced gained in the management and administration of large construction projects can be transferred to related logistics, industrial production, and command assignments.[13]

--Civil works assignments provide for a close association between military engineers and civilian construction personnel--architects,

engineers, contractors--with a resultant continuous exchange of ideas, techniques, and research information across the complete spectrum of construction activities.[14] This close association becomes all the more important during the early days of the war--"To know the capability, integrity, and capacity of this industry is absolutely essential to minimize mobilization and force deployment time requirements."[15]

Kudos

The proof of the above thesis, according to the DOD, rests with the accomplishments of the Army Engineers during wartime and the great positions of leadership held by these engineers during the same period.

The success and even the ability to carry out major projects such as construction of the Ledo Road, restoration of Cherbourg Harbor, laying of pipelines across Rance, bridging of the Rhine, opening of Pusan Port and establishment of the US base structure in Vietnam have been attributed to the carry over value of civil works training.

General of the Army, Dwight Eisenhower, when serving as Chief of Staff of the Army noted:

> I believe the rivers and harbors [program] does more to train our Engineers in the large conceptions by which they did their job in war than anything else they could do.[16]

General Eisenhower's views were shared by both allies and foes. Senior officers of the British, French, Canadian, Australian, German, Italian, and Japanese armed forces were greatly impressed by the superiority of the US engineer organization. The allied officers attributed this success to the peacetime experience gained by US officers in civil works.[17]

Looking at the rapid buildup of US Forces in Vietnam, General Bruce Palmer, former Army Vice Chief of Staff, indicated that "without the training gained in civil works activity--large scale, complex and fast moving programs, I don't believe our engineers could have coped so well with the vast problems that were part of quickly moving nearly half a million men into an underdeveloped country."[18] The value of this training was not limited to engineering alone. In 1950, Secretary of the Army, Gordon Gray, noted:

> . . . I was particularly struck by the fact that the proved benefits in World War II of the individual officer-training afforded by participation in large scale civil works program were not limited to the superiority of our military engineering effort but were also evidenced by the dominant part which officers trained in this system played in the almost miraculous logistical support afforded our Armies . . .[19]

Civil Works trained officers organized and commanded the Army Service Forces, the Transportation Corps, Communications Forces, Occupation Forces, and similar groups around the globe in WW II. Similar commands were held by engineers in Korea and Vietnam, and in the more recent past senior officers with civil works training have commanded such non-engineer activities as the Safeguard System Command, the Defense Communications Agency, NATO Armed Forces, and served as Civil High Commissioner in Okinawa and Governor of the Panama Canal Zone.

The System in the Field

Visits to several engineer districts and divisions and discussions with more than a score of former district and division engineers indicates that in the minds of these officers at least the training

value of civil works is outstanding. COL Marvin Rees, currently serving as District Engineer in Vicksburg, Mississippi, gave a typical reaction, "I have never in my military career had more responsibility and more authority and had to face a more diverse set of challenges than as District Engineer. I have found the assignment professionally broadening and excellent preparation to handle larger scale operations of both a military and civil nature."[20]

No one with whom I discussed the question could see anything but the greatest training value in the civil works assignment.

Alternatives

While recognizing the obvious value of civil works training, critics raise three issues. They suggest that perhaps the military officers could be "loaned" to a civilian agency to gather this experience. They also point out that the number of officers engaged in civil works activities (400) is insignificant when contrasted to the total size of the engineer officer corps (5000). They also point out that neither the Navy nor the Air Force has any similar "training area" and yet these agencies must produce wartime engineer forces.

In reviewing the suggestion that engineer officers be loaned to civilian agencies for training, the Army indicates that "this could not be accomplished with assignment of responsibility comparable to that which engineer officers now have . . ." If the civilian agency gave Corps officers responsibilities comparable to those they now have the civilian agency would not really have control over its new functions. If the agency exercised responsibility through its own

officials, the engineers officers would become observers and would gain no real experience.[21]

The number of engineer officers engaged in civil works is not an accurate gauge of the effect of the program with Corps. While only 400 or so may participate at any one time, lieutenant colonels, colonels, and generals generally remain in their jobs for only three years and most majors, captains, and lieutenants for only two. Over a period of time, most Regular Army officers will be afforded the opportunity to serve in civil works. This system complements the pyramidal nature of the Army with large numbers of lieutenants, few colonels, and fewer generals. Civil works duty becomes part of a Corps of Engineer officer's executive development. In 1966, for examply, 90% of the Engineer Generals on active duty had had civil works experience and over 100 more engineer officers, colonels, had had experience as District Engineers.[22] Seventy-five percent of the Engineers commanding battalions or larger units in Vietnam at that period had also had civil works district experience.[23]

It is difficult to compare the activities of the Army, Navy, and Air Force engineers. These organizations differ in size and mission. The Army and the Navy are charged by the DOD with support of Air Force contract construction in the field while the Army supports the Air Force in CONUS. Air Force Civil Engineers focus their attention primarily on maintenance of Air Force facilities and in some few cases on expeditionary airfield installation. Navy Engineers--the Seabees and the Naval Civil Engineering organization--are charged with support of Naval shore facilities and support of

Marine combat operations. By their nature, the scope of Navy engineering activities is vastly different than that of the Army. At the end of WW II, there were approximately 7000 (Navy) Civil Engineer officers on active duty as contrasted to over 40,000 Army engineer officers.[24] Admiral Ben Moreell, wartime head of the Naval Civil Engineers, indicated that "you can't compare the two organizations--they are very different." While not seeing the civil works training as an absolute necessity, Admiral Moreel, who himself had public works assignment in the Caribbean, sees it to be a distinct bonus for the Corps.[25]

Survey Evaluation

An important question in assessing the validity of the DOD rationale for retention of civil works is the real value of the civil works training to later military experience. The survey sought to gain the perceptions of the senior officers of the utility of this civil experience in their careers and in the performance of the engineer officers whom they were able to observe.

Three questions addressed the value of civil works experience to officers observed by the respondents during World War II, Korea, and Vietnam. A fourth question asked the respondent to assess the overall value to himself of his civil works training.

As indicated in Figures 8 (WW II), 9 (Korea), and 10 (Vietnam), the vast majority of the respondents felt that civil works training provided a major contribution to the competence of the officers whom they had observed. Over 94% of the respondents on all of the questions

KOREA

11. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

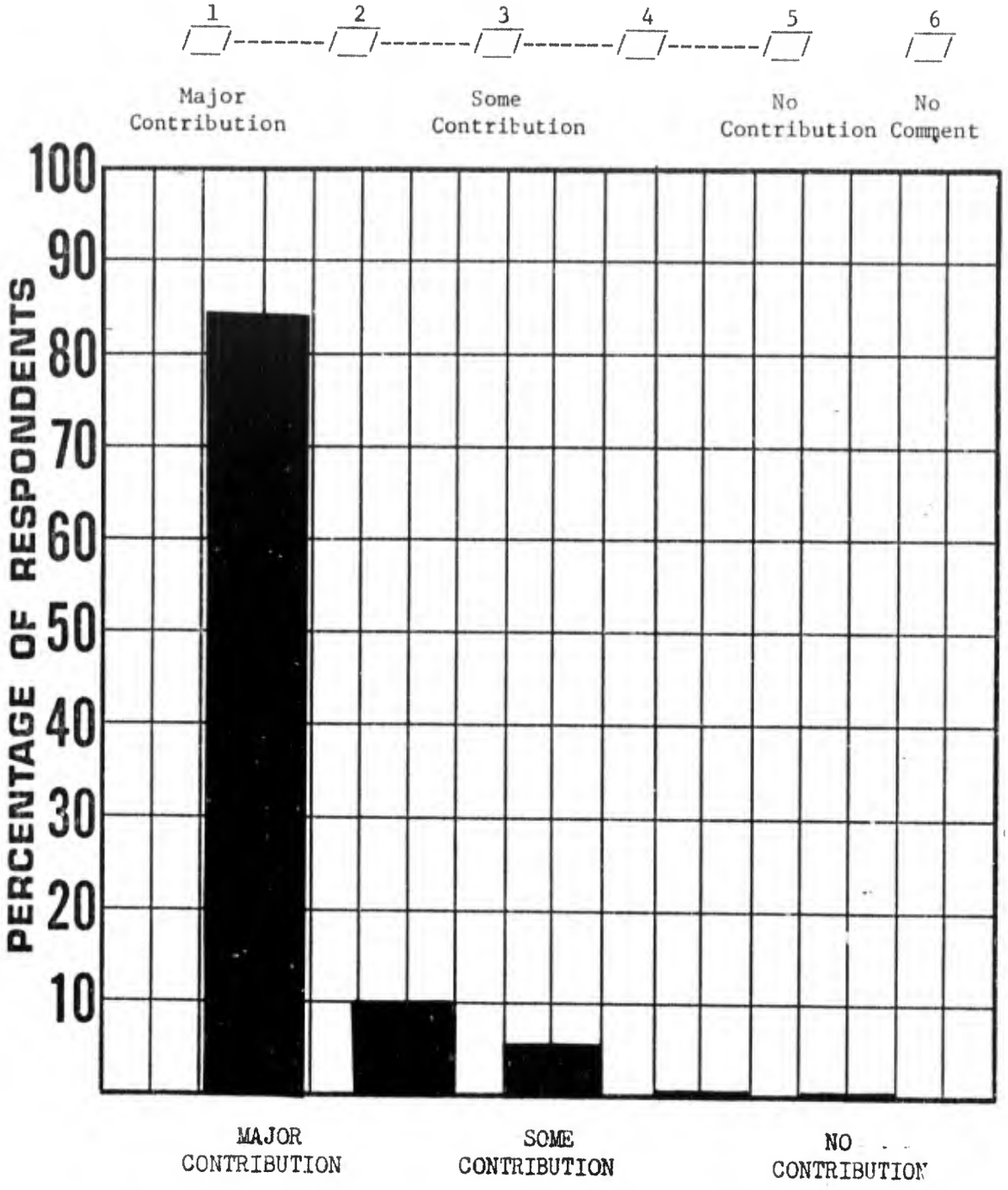


FIGURE 8

KOREA

12. In your opinion, do the ties that existed between the Corps districts and divisions and the remainder of the Army facilitate construction of the Continental United States mobilization base?

1	2	3	4	5	6
Major Contribution		Some Contribution		No Contribution	No Comment

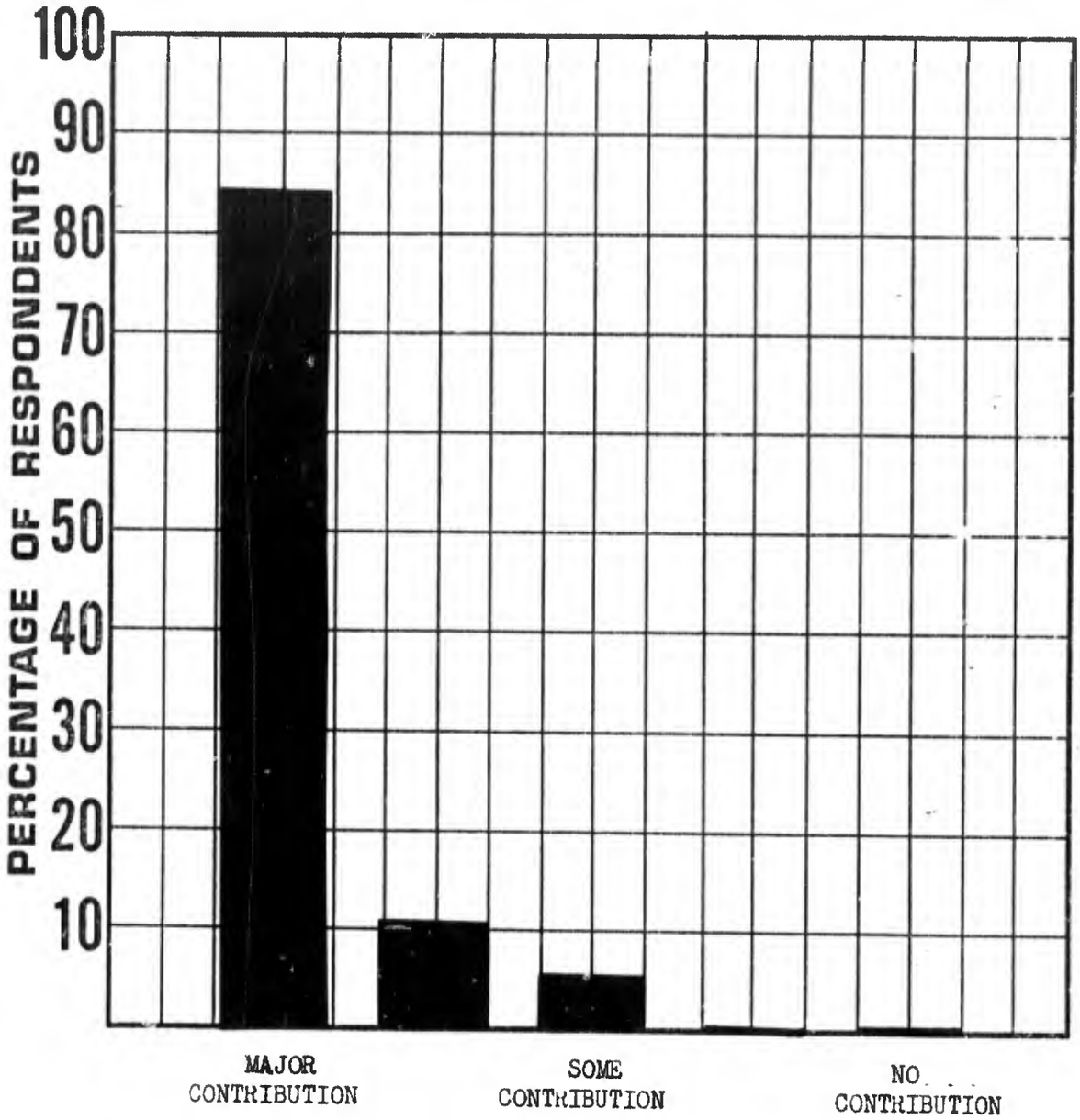


FIGURE 9

VIETNAM

17. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

1 Major Contribution — 2 — 3 Some Contribution — 4 — 5 No Contribution — 6 No Comment

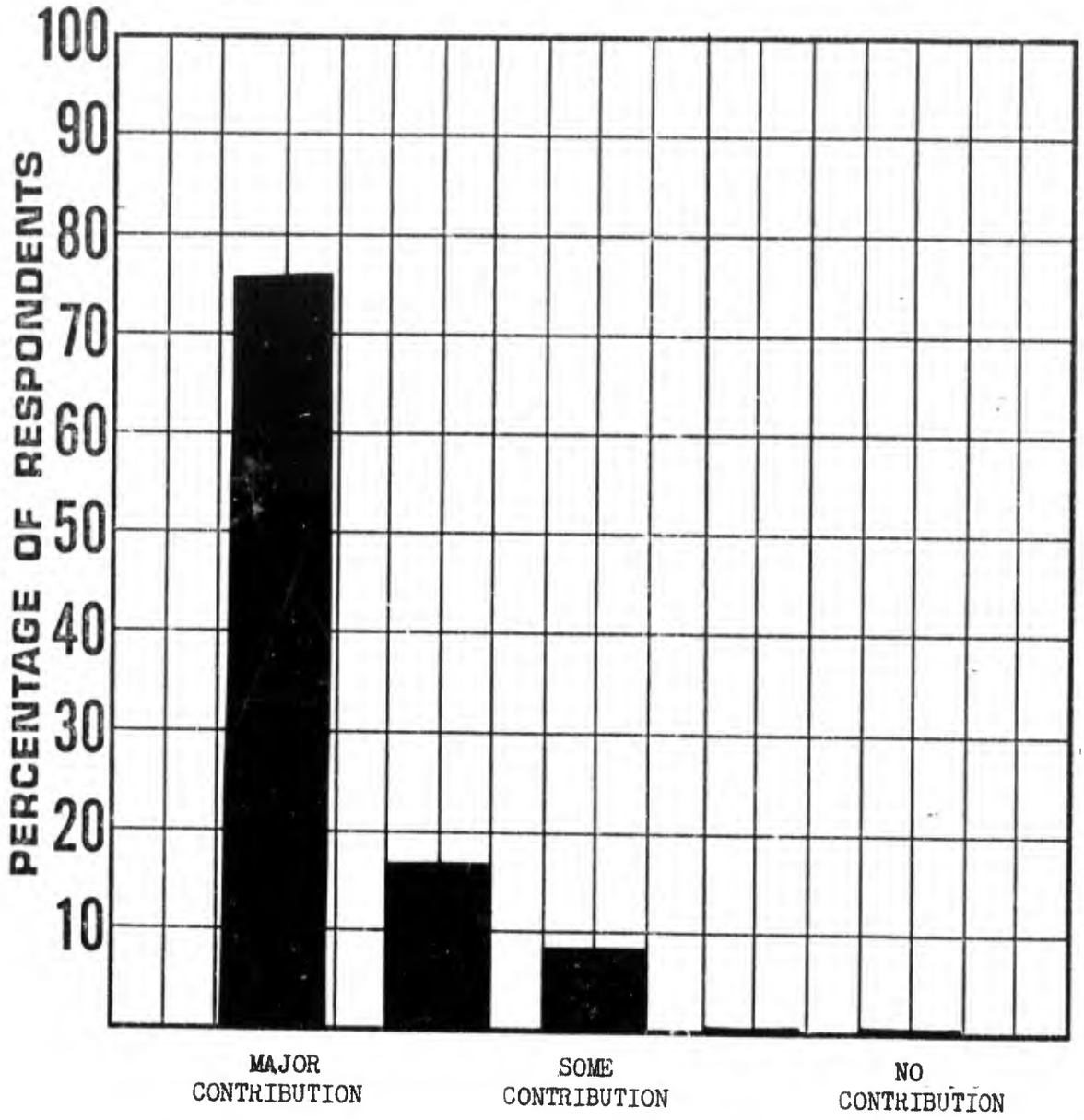


FIGURE 10

felt that civil works made greater than "some" contributions--the neutral response.

Figure 11 provides data on the respondents perception of the value of civil works to his own experience. Ninety-two percent of the 38 respondents felt that civil works had been of great value to them. Only one respondent was neutral.

The support for the training value of civil works--as observed in others and as a benefit to the individual respondent--was again overwhelming. (See Comments--Appendix A-Inclosure 5.)

MG Hugh Casey, who served as General MacArthur's Engineer in WW II found that:

> The opportunity for Corps of Engineer Officers to serve with relative heavy responsibility on Civil Works assignments with both technical and management experience prepared them much more than comparable ranks in other services.

MG James A. Christiansen served as MacArthur's Engineer during the Korean War and "was impressed by the capabilities of the senior officers who had in most cases served in Engineer Districts or Divisions or both." LTG L. J. Lincoln who was the Army's Deputy for Logistics during the early phases of the Vietnam War found it apparent in observing senior engineers "that the district/division experience contributed to their competence." LTG Lincoln felt that his own civil experience "was of extraordinary value in the remaining (16) years of my service; it in fact increased in importance as my seniority increased."

LTG Daniel Noce, who retired from the Army as Inspector General, commented:

20. Have you ever served in a district?

/1/ Yes /2/ No

21. If yes, was this tour of any value to you in your later service?

/1/-------/2/-------/3/-------/4/-------/5/ /6/

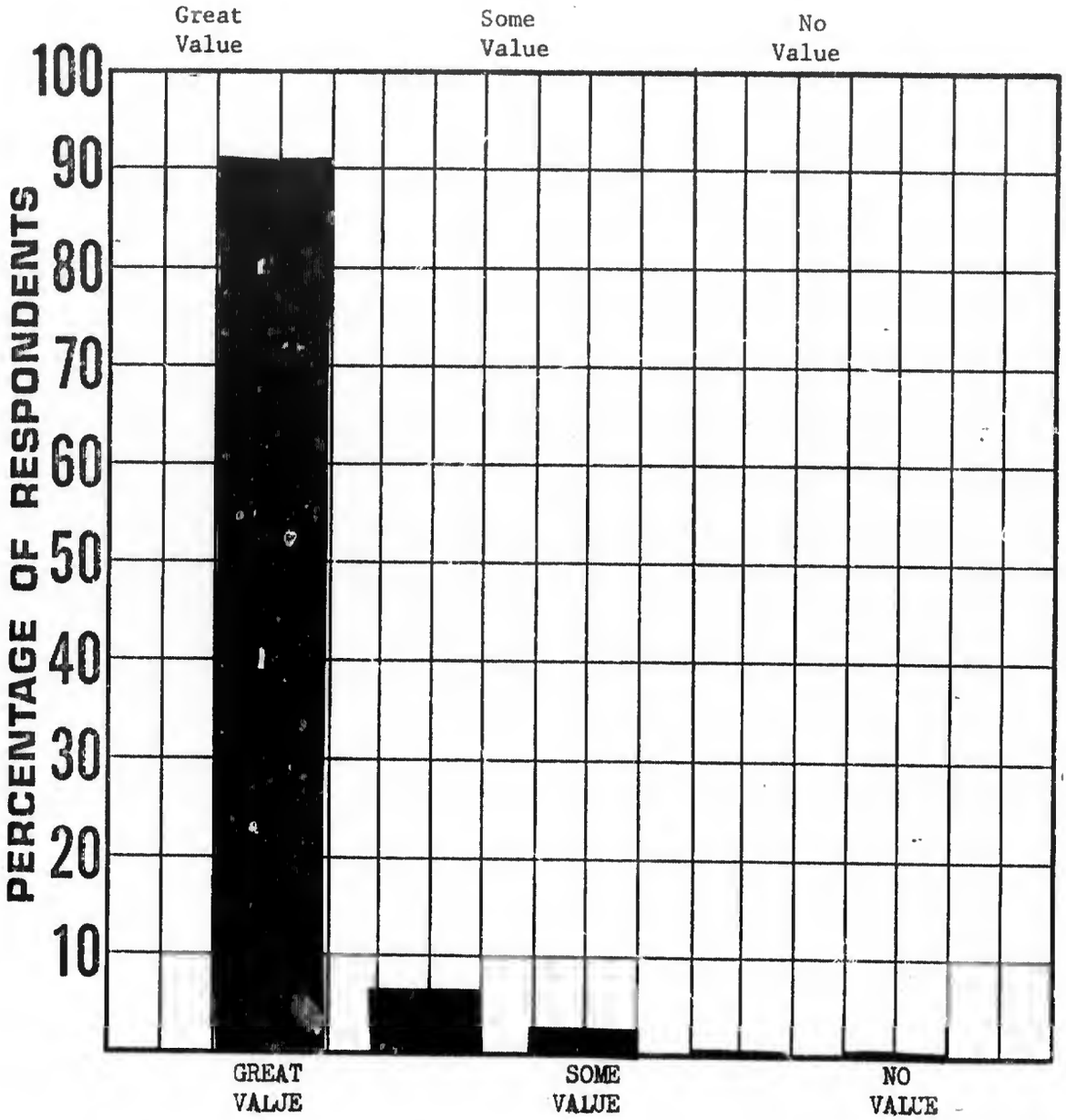


FIGURE 11

> There is no greater preparation for war than to be in a flood fight. The enemy (water) never gets tired and it works against you 24 hours a day . . . all equipment available--military and civil--must be mobilized and moved to places of danger as required.

General C. H. Bonesteel, former US Commander in Korea and an architect of the Marshall plan, found his district experience to be of great value "in planning and conduct [of] heavy construction, in inspection of construction, in fiscal and financial factors, in general military management and leadership. . . ."

MG William L. Starnes, a senior engineer commander in Vietnam, saw that in civil works he:

> learned about the principles of construction, design, and planning that I never learned as a troop commander. The construction mission of the Corps of Engineers . . . is no longer hasty field fortifications. Only through district service does one get exposed to large scale complicated construction tasks.

A check of the post-retirement positions of the respondents would indicate that their managerial and construction experience has had a great market in the civilian community--lending some credibility to at least the professional nature of the experience gained in civil works. The positions held or formerly held by respondents include President, Gult R&D Company; Chairman, New York Board of Transportation; General Manager, Washington Metro; Chairman, TVA; Director of Construction, New York World's Fair and Disney World; Engineer, Inter-American Development Bank; Vice President, Consolidated Edison; Chairman, COMSAT; to name but a few.

MILITARY CONSTRUCTION BENEFITS

Little has been written on this subject area. Secretary of the Army Stanley Resor, in testimony before Congress in 1967 indicated that the conjunction of the military and civil programs:

> . . . permits the two programs to be run on a complementary basis, with one overhead of technical and administrative personnel rather than two . . . Military construction requirements would demand that a substantial portion of this organization continue even if Civil Works responsibilities were eliminated . . . there would be no savings . . . the effect would be the opposite . . . it is [now] possible to shift personnel quickly and smoothly between the two.[26]

In short, Mr. Resor felt that transfer of civil works would hike the cost to DOD of military construction and reduce DOD flexibility.

Other benefits accrue to the Army's military construction program as a result of the association with civil works. Lessons learned and new data and techniques developed in the civil works research facilities are instantly available to the military construction effort, and these benefits range from new construction materiels to new techniques for gaining "customer satisfaction." As a result of this "transferability," the Corps new found expertise in environmental planning is being applied to military construction. Experience gained in preparation of Environmental Impact Statements (EIS) for civil works projects is being used to develop the required EIS for new military projects. In another takeoff, civil works public meeting techniques have been used effectively by some districts in determining user desires for the design of new family housing units.[27]

IMAGE

As a result of the Vietnam War, the image of the military as a whole suffered and is just now beginning a slow tortuous climb back. The presence of the civil works effort in the Army does much to enhance the image of the Army in certain parts of the country. A study board chartered by the Secretary of the Army in 1966 reported to him that:

> The Board observed at first hand the high regard in which the Corps of Engineers is held. Private interests, local government representatives, and members of other Federal Agencies were much alike in expressing admiration for the Corps competence generally even when being critical of specific things . . . in general the Corps is identified in the public mind as a part of the Army and . . . its actions reflect favorably upon the Army . . . [Emphasis added].[28]

Joe Califano, a high official in the Johnson Administration, in 1964 saw that the civil works effort "contributes greatly to the projection of a favorable image for the peacetime Army."[29]

And, as noted by the Board, even its critics have considerable room for praise of the Corps' overall efforts. Congressmen Henry Reuss, a sometime foe of the Corps credits it with "the know-how to boss rivers and move mountains."[30] Supreme Court Justice William O. Douglas who titled the Corps "Public Enemy Number One" in the next breath cited the Corps for being "honest and aboveboard."[31]

There are hundreds of places in this country, the Northeast, Southern California, the upper Midwest, to name but a few, where there is no major Army presence. All the average citizen in these areas

knows about the US Army he gathers from the media or in dealings with the Corps in public hearings, flood fights, and more likely, in using one of the many large recreation lakes constructed by the US Army Corps of Engineers. To many citizens, the Corps is "their" Army helping them, working with them and performing "civic action" at home.

One of the incentives for joining the Corps as a young man, as it was for the author, has always been the future challenge of a civil works assignment. A recent nationwide survey of over 150 opinion leaders indicated that the military personnel associated with the civil works program are highly respected in their communities.[32] It is the image of this respect that brings young men not only into the officer corps but also the enlisted ranks of the Army. The Secretary of the Army, H. H. Callaway, sees this grass roots contact of the Corps to be of tremendous utility to formation a nationally supported volunteer Army.[33]

THE DISADVANTAGES TO DOD

Obviously there must be some disadvantages to the DOD in supporting the civil works mission. The purpose of this section is to examine the nature of these costs.

Manpower

On 1 July 1973, the Corps of Engineers was authorized nearly 400 military personnel and 32,000 civilian personnel to operate the civil works program. In the days of government-wide personnel space shortages, it is obvious that there would be a substantial "cost" to

DOD of providing these non-defense spaces if the DOD were required to do so; however, this is not the case. Military and civilian manpower authorizations to support civil works are not chargeable to the DOD but are covered by appropriations and authorizations under Congressional public works actions. The Corps is authorized 14 Generals, 100 Colonels, and 286 other officers and these authorizations are over and above ceilings imposed by the Congress on the number of officers allowed the Army (e.g., the Officer Grade Limitation Act). Therefore, the existence of non-Army spaces in civil works does not constitute a cost to DOD, but rather provides somewhat of a bonus in that the military and civilian personnel of the Corps can slide between the two accounts--civil and military.[34]

Fiscal

A similar situation obtains in the fiscal area. In January 1974, the President requested from Congress $1.62 billion for support of the Corps' Fiscal Year 1975 civil works program. All of these funds are covered, not under the Defense appropriation but under the Public Works appropriation. There are no costs to the Army.[35] Even the expenses of the military personnel are picked up by the Public Works authorization; in fact, from the time an officer departs his military assignment for civil works duty until he returns to another military assignment, the costs of his pay, allowances, and moving expenses are borne by the Public Works appropriation.

Diversion of Focus

One intangible disadvantage of the civil works mission to the Army, some note, is the diversion of the focus of key DOD leaders that must necessarily take place as a result of having responsibility for both the civil works effort and the defense program. An extension of this diversion of focus may also exist in the temporary loss to the Army of the talents of some of the Corps officers and the remainder of the Army's perceptions of this loss.

In the first case, the leadership focus of those individuals directly in the chain of command (See Figure 5) must be directed to both civil and military areas. In actuality only two individuals, the Secretary of the Army and the Chief of Engineers, fall into this position of having both civil and military responsibilities. The Chief of Staff of the Army is off to the side as an observer to the civil works process.

In the case of the Secretary of the Army he is assisted by a Special Assistant for Civil Functions and is authorized but has never appointed an Assistant Secretary of the Army for Civil Functions. The diversion of the Secretary's focus from defense matters is minimal but does exist. Secretary of the Army Callaway looks on this diversion as a small price to pay for the benefits of civil works accruing to the Army. "It doesn't bother me at all--I find the Corps of great benefit to the Army and am pleased to be able to work with the organization."[36] No doubt, however, in the very nature of the public works planning process and its political roots, there is ample opportunity for the Secretary to become involved in decisions on

sensitive projects--decisions which must by their nature, take some considerable amounts of his time.

The Chief of Engineers, LTG William C. Gribble, also finds no problems in serving as the director of the Army's military engineering and construction programs and as the head of civil works. "I find the ties to be very close. I'm dealing daily with the same people. District and Division Engineers supervise both civil and military work. I certainly believe that the value the Army and the nation receive justifies any efforts on my part."[37]

General Creighton Abrams, the Army Chief of Staff supports General Gribble's views and is reported to have commented: "I stand in awe and admiration of the esprit de Corps pervading the entire Corps of Engineers [as a result of Civil Works]."[38]

The second case of focus diversion--the periodic loss to the Army of the talents of Corps of Engineers officers--is more complex. There are two apparent effects of this diversion. First, some non-engineer officers resent the non-Army service and feel that it "costs" the Army spaces and dollars as well as talent loss. Second, in carrying out this civil works service some engineers may lose sight of their basic mission--to serve the US Army.

Interviews were conducted with seven senior generals (six retired) and over 30 non-engineer colonels and lieutenant colonels (War College students) to determine if they felt that the Army was being shortchanged by the civil works mission of the Corps. The senior general officers indicated a general understanding of the program that they saw. Former Vice Chief of Staff of the Army, General

John E. Hull, felt that the Corps officers with whom he served did a "magnificent job" and made great use in the Army of their civil works training.[39] General Bruce Palmer, when asked if he thought the Army had been shortchanged answered, "Definitely not! I have always found the Corps' people most responsive."[40] General Robert Wood added that he felt that "the experience gained in civil works paid benefits to the Army as a whole."[41]

The discussions with the more junior officers produced considerably different results. Few had any knowledge at all of the nature and extent of the Corps' civil works effort. None were aware of the reimburseable nature of manpower and fiscal costs. (This is not surprising--a general officer who recently participated in a promotion board indicated that he and the Board were unaware of the "no-cost" nature of the Corps spaces. The board, as a result, felt that the Corps already had too many people in the grade to which they were promoting officers.) Most looked on civil works "as the place to which the Engineers disappear every few years for a little 'pork barrel.'" Many felt that it "appears unnecessary for the Army to get involved in these non-military activities." The present attitude, neutral at best, of these officers--their perception of civil works--is certainly an undesireable cost of the program.

The difference between the attitude of the senior and more junior officers can be attributed primarily to knowledge. All of the senior officers interviewed entered a small Army before World War II and had ample opportunity prior to and immediately following the War to observe and learn of the activity of their contemporaries who were

serving in the Corps of Engineers. They have also seen these engineer contemporaries rise to positions of great responsibility in and out of the Army. On the other hand, the junior officers, who joined a much larger Army and who have spent a half to a third of their careers associated with the Vietnam War, have had little opportunity to learn anything about the civil works effort--other than what they read in the papers (which is not very favorable). Few of their contemporaries, because of Vietnam have seen extensive civil works duty and none have reached these "positions of great responsibility." And, there is no real instruction in the Army school system (other than at the Engineer School) on the civil works program.

The second aspect of this species of focus diversion exists in the identity loss factor--officers becoming more closely associated with civil works than the Army. Comments from the questionnaire respondents indicate that this problem is not very prevalent but does exist and manifests itself in several ways. LTG Manuel Asensio, who served as Engineer for the Army Air Forces in China in WW II, found with respect to civil works training "most by far, profited from it--one or two were spoiled by it." General Bonesteel found that the only drawback of civil works was that some officers "with heavy R&H (Rivers and Harbors) background tended to place Engineer mission in construction, etc., above overall combat mission in theater.' LTG Lampert found that not all Engineer officers recognized "an obligation . . . to see to it that the rest of the Army knows the C of E places responsibility to the national security first in every way." MG G. E. Galloway, who commanded Engineer

Troops in WW II and Korea found that some few civil works trained officers "did not know what to do without support of a district organization."[42] The above views, coupled with the impressions of others now serving in the Corps, would indicate that this type of focus diversion can exist, if only in small measure.

The last aspect of this type of focus diversion rests with day to day relationships between the districts and the military organizations in their geographic vicinity. For reasons of managerial efficiency, the number of districts involved in military construction has been reduced over time so that today only 8 of the 36 CONUS Districts carry out this work. This means, in the worst example, that Fort Knox, Kentucky, which is less than 40 miles from the Louisville District, gets its military construction support from the Baltimore District hundreds of miles away. Louisville's ties with the military are quite loose-informal. Fort Knox does not receive the quality of service from the Engineers that they would be receiving were the District Engineer in Louisville responsible for its support. It would appear that efficiency has been overbalanced against service.

Some attempts are being made to improve this latter situation. Suggestions have been made to assign the master planning for each military installation to the District closest to this installation, leaving construction with the eight key districts. This would do much to improve the relationships.

Summary

A review of the disadvantages to the DOD associated with the Civil Works mission of the Corps of Engineers indicates that there is no measurable fiscal or manpower losses to DOD as a result of the program. Intangible disadvantages to DOD do exist in the diversion of focus of the engineer and general Army leadership away from the Army to civil works. While it does not appear that these disadvantages are substantial, the Army should be concerned about a growing questioning--or non-support--of the civil works mission among the future leadership of the Army, and a tendency in struggling to achieve management efficiencies to destroy the valuable two-way communication between the districts and the military installations in their vicinity.

CHAPTER IV

FOOTNOTES

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7. Ibid.

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10. "Corps of Engineer Functions . . ." I, op. cit., p. 16.

11. Harold K. Johnson (General), "Statement before Senate Subcommittee on Executive Reorganization, Committee on Government Operations," (Washington, 19 October 1967).

12. US Department of the Army, "A Report to the Secretary of the Army by the Civil Works Study Board," (Washington, Office, Chief of Engineers, January 1965), p. 151.

13. Ibid.

14. "Corps of Engineer Functions . . ." Op. cit., p. 7.

15. Letter from BG C. N. LeTellier to the author, 22 March 1974.

16. Dwight D. Eisenhower (General of the Army), "Statement before the Committee on Armed Services, US Senate," (Washington, Department of the Army, 16 July 1947).

17. "Corps of Engineer Functions . . ." Op. cit., p. 7.

18. Interview with General Palmer, Carlisle Barracks, PA, 6 February 1974.

19. Letter from Secretary of the Army Gordon Gray to Frank Pace, 7 February 1950.

20. Interview with Colonel Rees, Vicksburg, Mississippi, 8 April 1974.

21. "Corps of Engineer Functions . . ." Op. cit., p. 16.

22. "A Report to the Secretary of the Army . . ." Op. cit., p. 151.

23. Harold K. Johnson, op. cit., p. 2.

24. Albert L. Sturm, op. cit., pp. 1516-1527.

25. Moreell interview.

26. Stanley R. Resor (Secretary of the Army), "Statement before Senate Subcommittee on Executive Reorganization, Committee on Government Operations," (Washington, 19 October 1967).

27. Interview with MG Richard H. Groves, North Atlantic Division Engineer, New York City, 10 April 1974.

28. "A Report to the Secretary of the Army . . ." Op. cit., p. 152.

29. Memo from Joseph A. Califano, Jr., Special Assistant to the Secretary of the Army, to Willis M. Hawkins, Assistant Secretary of the Army (R&D), undated, 1964.

30. Henry S. Reuss, "Needed, An About-Face for the Corps of Engineers," Readers Digest, November 1971, pp. 129-131.

31. William O. Douglas, "The Public Be Damned," Playboy, July 1969.

32. Survey was conducted as part of the US Army War College Military Research Program. Details are contained in Military Research Program Report, "The Decision Process of the Corps of Engineers," June 1974.

33. Interview with Secretary Callaway, Washington, DC, 30 May 1974.

34. "Engineer Command Briefing," op. cit., p. 5.

35. Hearings Before Subcommittee . . . Public Works, op. cit.

36. Callaway interview.

37. Interview with LTG Gribble, Washington, DC, 13 May 1974.

38. Reported remarks at promotion of LTG Gribble to Chief of Engineers, Washington, DC, 1 August 1973.

39. Interview with General Hull conducted by LTC James Wurman under US Army Military History Oral Research Program, April 1974.

40. Palmer interview.

41. The Wood interview was also part of the Military History Program and was conducted by LTC William Narus, April 1974.

CHAPTER V

THE NATIONAL PERSPECTIVE

The purpose of this chapter is to review the advantages and disadvantages to the nation as a whole of having the Corps of Engineers carry out a major portion of the nation's civil works mission. Since the principal objective of this paper is to assess the DOD rationale for retention of the civil works mission, the discussion of this national perspective will, by necessity, be more brief. Each subarea is worthy of a paper in itself.

Proponents of retaining the Corps of Engineers in the civil works business point to the integrity of the Corps, the professional performance of this organization in water resources and other national development, the Corps' utility as an adjunct of foreign policy, and the Corps' record in support of disaster operations. Opponents point to national inefficiencies in water resource management, a lack of responsiveness on the part of the Corps to directions from the Chief Executive and the attendant "cozy" relationship between the Congress and the Corps.

THE NATIONAL ADVANTAGES

Integrity/Efficiency

The Chief of Engineers sees the Corps as the "honest broker" serving as a vital link between the people in the field and their national government. "The people must have faith in the Corps.

We believe they do."[1] As previously mentioned, even arch-foe Justice Douglas recognized this:

> The Corps . . . has a long and illustrious record, completely free of fraud, mismanagement, or other types of scandals . . . One who tours America will see many great and useful structures built by the Corps.[2]

The Second Hoover Commission also saw this professional integrity:

> . . . The Corps of Engineers has an enviable record for safe and adequate engineering design, that it has demonstrated its ability to carry out very large engineering projects, and that it has been signally free of any taint of fraud or dishonesty in the administration of the vast construction program with which it has been entrusted.[3]

Muddy Waters critic Arthur Maass, in February 1974, indicated that:

> The Corps today is in my judgement progressive, responsible, and one of the most intellectually honest of all Federal resources agencies . . . the officer Corps have endowed the organization with its recently demonstrated capacity for change--its ability to adjust organizational values to reflect current public concerns.[4]

Respondents to the previously mentioned nationwide survey of opinion leaders also expressed this belief. Conservationist John Micka of Michigan felt that:

> Our best hope for policing the environment rests with the Corps of Engineers. It is the only power on earth that has the ability to do the things that can be done for environmental enhancement . . . The American citizen . . . has at his disposal the greatest engineering force the world has ever known . . ."

John Bearden of Tennessee notes simply that, "I have great faith in the integrity of thy Corps of Engineers." Congressman Clem McSpadden of Oklahoma believes that, "if every agency of the Federal government was as cooperative and efficiently operated as the US Corps of

Engineers . . . there would be a significant reduction in the Public Debt." Walter Cowan, Editor of the New Orleans States-Item rates the Corps as "possibly the most efficient government agency."[5]

In my extensive travels I found very few people who, while being critical of specific Corps projects, would in any way impugn the integrity of the organization.

Performance

The Corps claims that its engineering successes speak for themselves (although environmentalists also make the same statement). The Corps has completed over 3300 civil engineering projects. Over 350 major dams, more than 9000 miles of levees, and 22,000 miles of waterways around the country provide for inland and intracoastal navigation, flood control, recreation, and power to millions. Fort Peck Dam in Montana itself is over four miles long. The Mississippi River flood control system of levees and dams over time will return 18 benefit dollars for every dollar spent.[6] The major ports of the nation such as New York, Philadelphia, and New Orleans are kept operational through Corps channel improvements.

The Capitol and Washington Monument are only two of the major buildings constructed by the Corps in the District of Columbia.

But, perhaps a better gauge of this performance might be gleaned by a review of some of the work recently accomplished by the Corps for other federal agencies.

Following the launching of Sputnik I, the nation moved into high gear in the space program. In 1960, the National Aeronautics and

Space Administration (NASA) selected the Corps to direct the construction of its over billion dollar ground launch and support facilities. The Corps rapidly moved to both expand its existing district organizations and to create a new district (Canaveral) to support the program. Within four years the Corps had completed or was in the process of finishing the John F. Kennedy Space Center at Cape Kennedy, the Mississippi Test Facility, the Manned Spacecraft Center at Houston, and the Marshall Space Flight Center at Huntsville, Alabama. The Vertical Assembly Building at Canaveral became the world's largest building.[7]

In 1970, faced with a multi-billion dollar program to expand national postal facilities, Postmaster General Winton Blount asked the Corps to assume this mission.

> Only the Corps has the resources to undertake such a massive building program without explosive start-up costs; I expect the Corps to bring a new degree of efficiency to the postal construction program.[8]

This Corps support of the Postal Service began in 1971 and is currently being phased out (at OMB direction). The program involved construction of Bulk Mail Centers, Preferential Mail Centers, and small post offices all around the country.[9]

The Corps is involved in more than construction. Corps labs and research facilities add considerably to the knowledge of man in the water resources area. The world famous Waterways Experiment Station at Vicksburg, Mississippi, has pioneered scale model studies of most major US harbors and waterways, and was recently awarded the Charles

Whitney Medal by the American Concrete Institute for its excellence in concrete research. The Coastal Engineering Research Center points towards better understanding of shore processes, winds, waves, and tides. The Cold Regions Research and Engineering Lab has focused on innovative techniques for cold-dominated environments. Several other labs and research centers round out the Corps extensive in-house capabilities. Each of these activities provide information and research results not only to the Corps but also to interested agencies throughout the country.[10]

Some inference of the measure of the Corps performance can be drawn from the Congressional action in 1973 in establishing the US Railway Association. Specific action was taken to authorize the Association and its elements to draw on the services of the Corps.

> The Association may . . . consult with the Secretary of the Army and the Chief of Engineers, and request the assistance of the Corps of Engineers; and the Secretary of the Army may direct the Corps of Engineers to cooperate fully with the Association . . . in order to carry out the purposes of this act.[11]

Further respect for the Corps' service to the nation was expressed in May 1973 in the US Senate where Senator John McClellan noted:

> In the course of its existence, the Corps has developed unparalleled skills for planning, constructing, and operating a fantastic diversity of water resources projects . . . it is a great leader in the struggle not only to preserve our abundant water resources, but also to transform, convert, and adapt the natural qualities of these resources into their fullest and most constructive usage . . .[12]

Disaster Support

According to Joseph Califano, the Corps:

> . . . embodies a nationwide organization with design, construction, and field supervisory capabilities which can react immediately in case of national disasters, either natural or enemy inflicted . . . Coordinated engineering efforts are essential to rapid and efficient recovery from such disasters and the Corps has repeatedly demonstrated its capability to direct these efforts. This experience and capability would be particularly important in case of a nuclear attack on the United States. . . .[13]

Hopefully the day will never come when this nation will suffer a nuclear attack. Should the holocaust occur, however, post-attack recovery operations will be the key to continued survival of the United States. The Corps of Engineers, with its decentralized organization, knowledge of local resources, existing ties to the military--both reserve and active, and disaster recovery experience is in a position to lead survival and reconstruction operations. Typical missions planned for the Corps include:

--Construction and repair of essential facilities such as hospitals, utility systems, and routes of communication.

--Heavy rescue operations and debris clearance.

--Decontamination and damage assessment.[14]

The Corps experience in post-disaster recovery is extensive and dates back to the Corps' earliest days. Some examples of this service include support of recovery operations following the New England Floods of 1955, the Texas City Explosion in 1947, the Great Plains Blizzard of 1948 and 1949, Hurricane Carla in 1962, and the Alaskan

Earthquake of 1964.[15] More recent experience was gained following Hurricane Camille, the Los Angeles earthquake, disasters at Rapid City, South Dakota, and Buffalo Creek, West Virginia, Hurricane Agnes, and the 1973 Mississippi River floods.

Each district has detailed contingency plans covering its support of these operations--to include data on equipment currently at work for the Corps and other equipment and manpower available in the area. Operations Centers are maintained and periodically exercised and liaison is maintained with local military units of the active and reserve forces and plans made for mutual support. (During the 1973 Mississippi River floods, Army units from several installations in the South worked for the Lower Mississippi Valley Division in flood fighting and evacuation activities.)

The efficiency of the Corps' disaster recovery efforts was recently supported by Senator Richard Schweiker's efforts in the Senate to have all federal responsibility for coordination of disaster recovery operations shifted from the Office of Emergency Planning to the Corps:

> I think a disaster is a very severe physiological and psychological event on our country. The only kind of response that is going to meet the need is one that is almost instantaneous and must have some kind of semi-military discipline involved.[16]

Senator Schweiker's State of Pennsylvania suffered heavy damage in 1972 during Hurricane Agnes. The Corps immediately formed the Susquehanna District at Harrisburg to carry out flood recovery. This district which was in operation for only four months was staffed by military and civilian personnel from around the country and was

augmented by junior officers attending the Engineer School at Fort Belvoir, Virginia. (Junior officers from the Engineer School have been used in support of a number of similar operations.) The overall effect of this Corps effort was pointed out by Mr. Charles Johnson, executive assistant to the Pennsylvania Secretary of Revenue, in supporting Senator Schweiker's move to give the Corps overall disaster coordination:

> . . . my experience with the Corps in Wilkes-Barre was one of complete admiration because they knew their job and they did it well, and I believe a military type operation in a large disaster is the only type that will bring the necessary response and action . . .[17]

This support of the Corps' role in disaster operations goes back a long way. In dissenting with remainder of the Hoover commissions recommendations to shift Corps civil works responsibilities, Commissioners John McClellan (US Senator) and Carter Manasco noted:

> Not only must we depend on the highest skill, experience, and efficiency of the Corps of Engineers in time of war, but we must depend on it for the greatest emergency service when disasters occur in time of peace. In times of devastating floods, the skill and services of the Corps of Engineers are brought into effective use to prevent greater catastrophe, to save human lives, and to alleviate the suffering of those who are its victims . . . The Corps of Engineers has not been found wanting in this capacity.[18]

Support of Foreign Policy

Although primarily oriented on the United States, the civil works effort of the Corps has had its impact on foreign policy. Because of its internationally recognized engineering reputation, its favorable image in foreign countries as an example of a military participation

in nation building (the US frontier, et al), and its flexibility of organization, the Corps has been asked to provide peacetime (nonmilitary) assistance to more than 30 foreign countries. This support ranges from provision of expert advice to actual direction of construction. In some cases military units only, backed by Corps civilian advisors, provide the support. In most cases, task forces were drawn from the districts, divisions, or research activities to carry out the mission. Typical uses of the Corps have included:

--In 1947, under the Interim Aid Program for Greece, the Corps established the Grecian District which supervised the reconstruction of roads, railroads, and harbors throughout the country--a $98 million effort.

--In 1955, 1966, and 1970, experts from the Lower Mississippi Valley Division provided on site investigations of flood control programs on the Brahmaputra River in India.

--From 1963 to 1967, the Corps directed construction for the Afghanistan government of major highways throughout the country. The cost of the Kabul-Kandahar section alone was $42 million.

--Since the early 60s, the Corps' Saudi Arabia District has provided various Saudi funded support to the development of civil facilities in that country. Completed projects include the Dharan Civil Airport and the Saudi Television System.[19]

These Corps efforts, in addition to providing tangible proof of US interest, serve to provide a model for these foreign governments of peaceful uses of their military engineers. The contact between

indigenous military engineers and the people serves to strengthen the ties between the people and the national government.

Foreign officers also get first hand looks at the Corps while attending the Army Engineer School at Fort Belvoir. Hundreds of foreign military engineers attend this school each year and observe how the US Army Engineers relate to their country.[20]

International relations expert, Ray Moore, of the University of South Carolina and visiting professor at the Army War College, finds that this use of the Corps in "other nationbuilding" provides a "valuable example for the military of these new nations as to effective and peaceful use of their own military talents."[21]

THE NATIONAL DISADVANTAGES

Inefficiency?

Most critics of the Corps point to the first Hoover Commission's report that in water development:

> there is duplication and overlap of effort and policy conflicts between the Army Engineers and the Bureau of Reclamation in Construction of, and jurisdiction over projects.[22]

This Commission, as noted, recommended transfer of the Corps responsibilities to Interior to eliminate these inefficiencies.

Robert Moses saw the same overlaps in his first Hoover Commission Task Report but felt that the sclution lay in forming a new department, rather than by giving Interior more responsibility.

Admiral Ben Moreell's Water Resources Task Force on the second Hoover Commission also found that ". . . with 25 Federal Agencies . . .

concerned with water resource and power programs, it is inevitable that aims, activities, and ambitions should clash."[23] This Task Force did not see that reorganization would offer a solution but chose to recommend clearer federal policy development and an executive branch review procedure.

Senator Moss, in 1965, continued to find duplication and overlaps and recommend reorganization.

Will reorganization alone provide efficiency? This question is worthy of volumes. Admiral Moreell doubts it. "Without a clear Federal Policy, no operation will be successful. There is nothing magic about consolidation--in itself it does nothing."[24] Robert Moses today is less adamant about organization. "No form of government makes a big difference--it's the people in it!"[25]

Maass, who, as noted, was a behind the scenes force on the first Hoover Commission would still like to see the Corps consolidated into a water resources agency. ". . . with great care being taken to ensure that the organization survives and develops and that it does not deteriorate by . . . being placed under the control of a less competent administrative structure."[26] But is this agency to be the Department of Interior, which former Assistant Secretary of Interior Stanley Cain calls ". . . a loose confederation of soverign agencies often at war with each other."[27]

The Nixon reorganization plan appears to serve a middle ground. The new department would provide policy (to eliminate overlaps) and would leave to the Corps most of its present mission. Will this make the system more efficient?

Certainly, the efficient organization of the Federal Government must be considered. The problem then is to determine a priori what means might be used to assess whether or not the reorganized water resources organization would in fact improve government efficiency.

Lack of Responsiveness

For years, textbooks have pointed out the Corps' lack of responsiveness to the President and cited the Kings River Case found in the Task Force Report on Natural Resources, Muddy Waters, and in the Inter-University Case Study Series as the grounds. Little is written on this subject today and it is difficult to conceive of a Chief of Army Engineers "bucking" the President.

Arthur Maass finds that the Corps has changed.

> The principal grounds for which I criticized the Corps in 1950--that they acted independently of the President and of the President's staff agencies . . . [etc.] . . . are no longer valid for the most part.[28]

Whether or not the Corps ever acted independently of the President is a disputed question.[29] However, it would now appear, that even if it did, this "cost" factor may no longer exist.

Pork Barrel

A Dictionary of Americanism defines Pork Barrel as "a governmental appropriation or bill which supplies funds for local improvements designed to ingratiate Congressmen with their constituencies. . . ."

An often cited cost of having the Corps involved in civil works is the "pork" that is the product of the marriage between Congress and the Corps. If projects are, in fact, created for their 'pork'

value, there is definitely a cost to the nation. But two questions are raised--what is pork--and what is the Corps' role in 'pork barrelling'?

Senator James Buckley as might be expected finds that, ". . . among good and honest men, there is no consensus as to what constitutes pork . . ."[30] Some argue that any project with a favorable benefit to cost ratio is a valid project--others feel 'pork' is generated whenever a project is approved that does not fall within national policies (if they can be defined).

The second aspect--the Corps role--is also open to question. Is it the system or the agency that creates "pork" or at least the illusion of "pork?" Would it be (or is it) any different with respect to Congressional dealings with the Department of Interior or Agriculture. Many Congressional critics say that there is 'pork' of one form or another in most appropriations be they for health, agriculture, or military procurement.

Assessment of the costs to the nation of having the Corps of Engineers involved in what could be 'pork barrel' operations cannot be adequately addressed by this paper.

CHAPTER V

FOOTNOTES

1. Gribble interview.

2. William O. Douglas, op. cit.

3. Water Resources and Power, op. cit., p. 67.

4. Arthur Maass, Statement before the Senate Government Operations Committee, Washington, February 27, 1974.

5. All of these comments are found in the USAWC Military Research Program Report, "The Decision Process of the Civil Works Function of the US Army Corps of Engineers," by G. E. Galloway.

6. Hearings Before Subcommittee . . . Public Works, op. cit., p. 207.

7. "US Army Corps of Engineers . . ." Op. cit., pp. 36-41.

8. "Command Briefing," p. 16.

9. Ibid., pp. 16-18.

10. US Department of the Army, Annual Report of the Chief of Engineers, 1972, (Washington: GPO, 1972).

11. Public Law 93-236, 2 January 1974, Regional Rail Reorganizations Act of 1973, Section 202(2)(7).

12. John McClellan, Congressional Record, (1973), 119, No. 80, May 29, 1973, S9758.

13. Califano letter, op. cit., p. 2.

14. "US Army Corps of Engineers . . ." Op. cit., pp. 42-44.

15. Ibid., p. 44.

16. Richard C. Schweiker, Statement before the Subcommittee on Disaster Relief, Senate Public Works Committee, Washington, DC, September 12, 1974.

17. US Senate, Hearings before the Subcommittee on Disaster Relief of the Committee on Public Works, United States Senate, (Washington: GPO, 1973), p. 173.

18. US Commission on Organization of the Executive Branch of Government, Department of the Interior, (Washington: GPO, March 1949), p. 87.

19. US Department of the Army, "Utilization of the Corps of Engineers Overseas," (Information paper), DAEN-ZCC, 15 April 1974.

20. Irving Crump, Our Army Engineers (New York: Dodd, Mead, and Co., 1954), p. 71.

21. Interview with Professor Moore, Carlisle, Pennsylvania, 28 March 1974.

22. Department of the Interior, op. cit., p. 26.

23. Report on Water Resources and Power, I, op. cit., p. 24.

24. Moreell interview.

25. Moses interview.

26. Maass statement.

27. Stanley A. Cain, "Environmental Management and the Department of Interior," in Politics, Policy, and Natural Resources. Dennis L. Thompson, ed. (New York: Free Press, 1972), p. 367.

28. Maass statement, p. 4.

29. Many senior engineer officers interviewed by the author violently disagree with Maass 1951 contentions and claim that the "Kings River Case" is a distortion of fact.

30. James J. Buckley, letter to the Editor, The Washington Post, 31 December 1973.

CHAPTER VI

COMMENTS, CONCLUSIONS, CHALLENGES

As has been noted throughout this paper, it is most difficult to weigh the advantages/disadvantages of Army participation in the national civil works effort. Examination of DOD's rationale for retaining the civil works program was made somewhat easier by the great amount of information on the subject. Even though most factors were not quantifiable, the available data was most descriptive. The view from the national perspective was tangled. Most factors considered were intangible. There was more data available on advantages--as people like to discuss these items--than on disadvantages and most of the data in this latter area appear to be dated.

The conclusions expressed below are highly subjective. They represent only the reasoned judgement of the author after eight months of exploring and some 20 years of observing the subject. There is obviously considerable room for further examination.

CONCLUSIONS

From the DOD Perspective

The Department of Defense rationale, expressed in a myriad documents, for retaining the civil works mission of the Corps of Engineers within the Army appears sound.

--There is considerable value to the Defense establishment in having a major engineering organization in-being, not 'charged' to DOD but in continuous liaison with Army elements. The capability for

rapid conversion from civil to military missions has been visibly demonstrated on many occasions and in an era where the US strategy is based on rapid mobilization this expansion capability is essential.

--The training value to the key personnel of the Corps of the civil works assignments is enormous and is fully supported by senior officials within and without the Corps. This program is a vital aspect of Corps executive development activities. Schemes which would loan Corps officers to other agencies for training do not consider that a major aspect of this training is delegation of authority and responsibility--which would be difficult if not impossible under a 'loan.'

--Continuation of civil works activity within the Corps provides a leveling mechanism for smoothing out the peaks and valleys of the Army's military construction program. Loss of civil works would require an increase in the size of the military construction organization.

--The "image" of the Army as a whole is enhanced by the grass roots nature of the Corps professional activities. The "green suit" presence at the local level, providing tangible support to the people, can greatly assist in improving the public perception of a peacetime military force and thereby improve the Army's recruiting potential in these areas.

The costs to DOD associated with retention of the civil works effort are minimal. There are, however, two problem areas associated with DOD retention of this civil works mission.

--Over time, participants in the civil works program have been warned "don't forget the Army!" The Chief of Engineers has been most active in efforts to prevent this loss of memory; nevertheless, there has been a tendency in the past decade to place management efficiency in the forefront, occasionally to the detriment of the Army. Service to the Army and some of the close ties between districts and the active Army mentioned above have suffered as a result of consolidation of military construction responsibilities in eight districts. Army officers assigned to civil-only districts find it easy to lose touch with the rest of the Army.

--To be a successful part of the Army team, the Corps of Engineers Civil Works program must continue to have the support of the military leadership of the Army. If the random sample taken at the War College is accurate, and I have every reason to believe it is, the Corps is in danger of losing this support in the next decade or so. Tomorrow's Army leaders either do not know about or know only incorrect information about the Corps civil works effort. This ignorance has engendered either neutrality, or, worse, hostility.

National Perspective

There appear to be many advantages to the nation as a whole in retaining the Army Engineers' civil works mission within the Army.

--The Corps has a long and enviable record of service to the nation in the water resources area. It has and continues to operate as the "honest broker" between the people and government in Washington.

--The Corps' past performance in disaster recovery has been outstanding. The Corps has unique attributes which permit it to responsive, flexible, and pre-organized for the mission. Its potential for such work in the future is an important asset to the emergency preparedness of this nation--be it for natural or man-made disasters.

--The image cast abroad by the Corps' participation in peaceful construction efforts of developing nations and the concurrent "training" of foreign officers in this 'nation' building is an asset to the foreign affairs of this country.

The costs to the nation of the Corps participation in civil works cannot be accurately measured.

--Certain efficiencies no doubt would accrue to any consolidation of national water resource activities; however, it is not as certain that the act of reorganization would not in itself create more inefficiencies.

--As long as there are people, there will be people who cry 'pork' in response to certain federal activities. The unanswered question with respect to the Corps is not whether or not certain projects of the Corps are called 'pork,' but rather would the issue be any different with another agency in charge.

OVERALL CONCLUSION

The advantages of leaving the Corps of Engineers civil functions in the Department of Defense are apparent. The disadvantages of such action are not quite so obvious. Prior to any shift of functions, the

proponents of the shift should be required to fully demonstrate that the profits from the reorganization will offset the losses to DOD and the nation.

CHALLENGES

While the Corps of Engineers can be justifiably proud of its service to the country and the close relationship that exists between its military and civil missions, several challenges stand in its path.

--The Corps must make every effort to involve each District in some way with regional military activities. Suggestions have been made and are under consideration to assign military installation master planning to the district closest to the installation. Other recommendations have been made to redistribute the military construction workload to more districts and to tie any increased costs to better service and increased readiness, or to assign some responsibility for facilities engineering at military installations to the closest District to increase the professionalism of these activities. Meeting this challenge will ensure that the Army is not forgotten by the civil works districts and that these same districts do not lose the ties with the military so necessary to maintain the viability of the wartime expansion capability.

--The Corps must develop means to keep the officer corps of the Army informed of the whys and wherefores of the civil works effort. Instruction on Army civil functions at the Command and General Staff College should provide for a basic understanding of the rationales for Army participation in civil works. This instruction should be

supplemented by the Chief of Engineers addressing students at the Senior Service Colleges. Efforts must also be made to get the Engineer message into non-engineer service magazines and journals--not into engineer-only documents.

--Allied with the education of the officer corps, the Corps must continue to correct erroneous public perceptions of the Corps. Taking an attitude of "our actions speak for us" will do little to inform a public that over the years has been subjected to a barrage of misinformation about the Corps.

The challenges are there. "Essayons."

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_____, "Announcement, Public Meeting, Randleman Dam and Howard Mills Lake," February 1974.

_____, "Open Letter, Land Aquisition, Falls Lake Project," May 1972.

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APPENDIX

QUESTIONNAIRE SUMMARY

This appendix provides general information on the questionnaire used as part of this report. The basic purpose of the questionnaire was to determine the perception of the training and mobilization value of the civil works mission of the Corps by retired senior officers of the Corps of Engineers.

QUESTIONNAIRE DESIGN

The questionnaire was written by the author with the technical assistance of Dr. Donald D. Penner, PhD, and CPT Darryl Steiner of the US Army War College. The questionnaire format was designed to elicit from the respondents a subjective appraisal of the value of civil works experience. Questions were posed (with certain exceptions) to permit selection of responses along a continuum of from bad to good with five points providing the spectrum. Questions were also formatted to simplify data extraction for use on punch cards and comment synthesis sheets.

Draft versions of the questionnaire were pre-tested by members of the staff and faculty at the Army War College and 4 members of the Office Chief of Engineers in Washington. Three iterations of the pre-test were necessary; however, not all the members at the test group participated in all three reviews.

The questionnaire is at Enclosure 1.

QUESTIONNAIRE TARGETS

With two exceptions, questionnaires were sent to senior retired officers of the Corps of Engineers. These officers were selected through a search of the West Point Alumni Register, the roster of retired Corps of Engineer personnel and consultations with senior retired engineer officers. Forty-five officers, still living, with great experience in World War II, Korea, and Vietnam, were finally selected. Because of their great experience, two active duty officers (not now in engineer positions) were also asked to complete the questionnaire. These officers make up over 40% of the total population of senior engineers of World War II and Korea and approximately 20% of the retired senior officers with Vietnam experience.

COVER LETTERS

Each questionnaire was forwarded by a cover letter (Inclosure 2). Each letter was addressed to an individual (as opposed to a position) and was accompanied by a three or four line personal note from the author generally citing the reason for the addressee's selection and urging return of the letter.

RESPONSE

Overall 47 questionnaires were dispatched during the week 4-8 February. As of 15 May, 41 completed questionnaires had been returned, a raw response rate of 87%. One individual returned the questionnaire without completing it, indicating that a stroke had

hampered his memory. One questionnaire was returned with an "individual moved" notation.

Questionnaires sent	47
Returns	2
Total Received by Addressees	45
Questionnaires returned	41
Other responsive returns	0
Total responsive returns	41

$$\text{Effective Return Rate} = \frac{\text{Number Responsive Returns}}{\text{Number received}} = \frac{41}{} = 91\%$$

A comparison of addressees who returned questionnaires to those who did not, indicated no basic differences in the nature of the addressees.

All respondents were given the opportunity to return the questionnaire with a guarantee of anonymity. Only one officer chose to disassociate his name from his replies. A list of those respondents who agreed to use of their name is at Inclosure 3.

Survey results are at Inclosure 4. Additional detail is found in the study itself.

Respondents were given the opprotunity to comment on each question and additional comments were often provided in cover or separate letters. Extracts of these comments are at Inclosure 5.

February 1974

The Civil Works Program of the US Army Corps of Engineers

Questionnaire

Instructions: Each question is followed by six possible answers. One answer is "Don't know." The other answers may be on a continuum or distinct basis, e.g.,

Continuum - Does it snow in Florida?

1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6

Almost never | Half the years | Every year | Don't know

Check the block which best indicated the location on the continuum of the best answer.

Distinct - Who has the best pro football team?

1 Dallas | 2 NFL's | 3 Miami | 4 Los Angeles | 5 Washington | 6 Don't know

Check the block(s) that in your opinion, best answers the question. In some cases, more than one block may be checked. Space is normally provided after each question for any comments and comments are encouraged.

PART A (WWII)

The following questions pertain to your service in World War II. (If you did not serve in WW II, go on to Part B)

1. In what geographic areas did you serve? _____

_____

2. What were your principal positions? _____

_____

3. What rank did you attain? _____

_____

4. Were you in a position to observe the technical performance of senior engineer officers? (Include yourself)

1 Yes 2 No (Go on to Part B)

5. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

1	2	3	4	5	6
Major Contribution		Some Contribution		No Contribution	No Comment

Comment _____

_____

_____

6. In your opinion, did the ties that existed between the Corps districts and divisions and the remainder of the Army facilitate construction of the Continental United States mobilization base?

1	2	3	4	5	6
Major Contribution		Some Contribution		No Contribution	Don't know

Comment _____

_____

_____

PART B (Korea)

The following questions pertain to your service during the Korean War. (If you did not serve during the Korean War, go on to Part C).

7. In what geographic areas did you serve? _____

_____

8. What were your principal positions? _____

_____

9. What rank did you attain? _____

_____

10. Were you in a position to observe the technical performance of senior engineer officers? (Include yourself).

/1/ Yes /2/ No (Go on to Part C)

11. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

/1/-------/2/-------/3/-------/4/-------/5/ /6/

Major Contribution | Some Contribution | No Contribution | No Comment

Comment _____

_____

_____

12. In your opinion, do the ties that existed between the Corps districts and divisions and the remainder of the Army facilitate construction of the Continental United States mobilization base?

/1/-------/2/-------/3/-------/4/-------/5/ /6/

Major Contribution | Some Contribution | No Contribution | No Comment

Comment _____

_____

_____

PART C (Vietnam)

The following questions pertain to your service during the Vietnamese War. (If you did not serve during the Vietnamese War, go on to Part D).

13. In what geographic areas did you serve? _____

_____

14. What were your principal positions? _____

_____

15. What rank did you attain? _____

_____

16. Were you in a position to observe the technical performance of senior officers? (Include yourself).

/1/ Yes /2/ No (Go on to Part D)

17. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

1	2	3	4	5	6
Major Contribution		Some Contribution		No Contribution	No Comment

Comment _____

_____

_____

PART D
(All please answer)

18. In your opinion, should the Civil Works Program of the US Army Corps of Engineers be retained under Department of the Army?

1	2	3	4	5	6
Strong Yes	Yes	Neutral	No	Strong No	No Opinion

19. If no, what parts should be transferred? _____

_____

Comment _____

_____

_____

20. Have you ever served in a district?

1 Yes 2 No

21. If yes, was this tour of any value to you in your later service?

1	2	3	4	5	6
Great Value		Some Value		No Value	

Why? _____

_____

_____

22. At what grade(s) was your district service?

1	2	3	4	5	6
/__/	/__/	/__/	/__/	/__/	/__/
LT	CPT	MAJ	LTC	COL	No Service

Name _____

Address _____

_____

(Use of name will be governed by your clearance below)

50. Have you worked in engineering since your retirement?

/__/ 1 Yes /__/ 2 No

51. If yes, doing what? _____

_____

Data from this questionnaire will be incorporated in data gathered from many respondents. There will be obvious anonymity in the grouped data, however, your comments will also provide valuable information, and we would like to be able to freely quote you by name.

/__/ You have my authority to "quote" me by name concerning the information supplied in this questionnaire.

/__/ I desire that my name not be directly tied to my answers.

/__/ Please send me a summary of survey results.

DEPARTMENT OF THE ARMY
US ARMY WAR COLLEGE
CARLISLE BARRACKS, PENNSYLVANIA 17013

IN REPLY REFER TO:

AWCSC

1 February 1974

Dear

Over the past decades, some members of the Congress, the Administration, the Supreme Court, the academic community, and the media have suggested that the civil works activities of the US Army Corps of Engineers be transferred in toto from Department of the Army to some other element of the federal government. They cite the potential benefits in efficiency that can be derived from such consolidations. They point out that the Corps is staffed primarily by civilians with the military playing only a [illegible] role.

On the other hand, the civil works program of the Corps has a long record of close association with the US Army. The Corps' proponents point to the valuable experience provided military officers by service in civil works. They recall the Corps' shift of construction effort from civil works to mobilization support in World War II. Even the Corps' severest critics praise the integrity of the officers who have led it and note the contributions made by the Corps to the nation's growth.

As part of the Commandant of the Army War College's Military Research Program and in cooperation with the Public Administration Program of Pennsylvania State University, I am conducting an independent evaluation of the current criticisms of the Corps of Engineers. An examination of the relationship between the Army as a whole and the Corps will be a significant part of this evaluation. This evaluation is being conducted with the full knowledge and cooperation of the Chief of Engineers.

A critical segment of the overall evaluation will involve a nationwide survey of retired general officers who have had experience in construction in World War II, Korea, or Vietnam. The attached questionnaire provides the means through which the survey will be accomplished.

INCL 2

AWCSC

1 February 1974

I earnestly request your assistance in completing the questionnaire. Although I would prefer to be able to quote you on your answers, if you so desire, your anonymity will be maintained.

Thank you in advance for the 20 minutes needed to complete the questionnaire. If you so indicate on the questionnaire, I will provide you with a summary of the survey results.

Sincerely,

G. E. GALLOWAY, JR.
Colonel, Corps of Engineers
Project Leader

1 Inclosure
Questionnaire

Respondents to Questionnaire

General Frank S. Besson (13)

General C. H. Bonesteel (2)

General Bruce C. Clarke (9)

General Lucius Clay (23)

General W. M. Hoge (12)

General R. G. Stilwell (35)

LTG M. J. Asensio (1)

LTG Austin W. Betts (15)

LTG Donald P. Booth (27)

LTG C. H. Dunn (29)

LTG James B. Lampert (24)

LTG L. J. Lincoln (30)

LTG Daniel Noce (10)

LTG Arthur W. Oberbeck (14)

LTG A. G. Trudeau (4)

LTG Walter K. Wilson, Jr. (26)

MG W. A. Carter (25)

MG Hugh J. Casey (32)

MG James G. Christansen (7)

MG Robert J. Fleming, Jr. (41)

MG G. E. Galloway (36)

MG Jackson Graham (8)

MG Charles P. Gross (5)

MG K. F. Hertford (31)

MG W. W. Lapsley (39)

MG Edmond W. Leavy (40)

MG James McCormack (34)

MG K. D. Nichols (38)

MG David S. Parker (37)

MG Edward G. Plank (16)

MG William E. Potter (22)

MG George J. Richards (28)

MG William L. Starnes (19)

MG David H. Tulley (33)

MG Paul F. Yount (6)

BG Kenneth E. Fields (20)

BG James K. Herbert (21)

BG Paul W. Thompson (3)

BG Herbert D. Vogel (18)

COL Hubert S. Miller (17)

INCL 3

Comments to Questionnaire
(Numbers refer to respondents--see Inclosure 3)

5. (Were you in a position to observe the technical performance of senior engineer officers in WW II?) In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

Knowledge of how to get big projects underway and successfully accomplished could have been acquired no other way. 18

Only officer in entire Corps with civil works experience. Contributed greatly to my effectiveness in many ways. 17

Very true for me and for others I observed; the positive responsibility for organizing force account work or supervising contract work, frequently of great magnitude, provided opportunities for development of engineer and management skills not otherwise to be gained in peacetime duty. 16

At that time, engineer officers had no other opportunity to get adequate construction experience. 15

When they had such prior service in construction work it was a help, but many others were equally competent who had never had such service. 14

I was impressed by the capabilities of senior Engineer Officers to get the engineer jobs done and their skill in organization and supply for the jobs. 7

This command of 20,000 troops and about double that number of civilian employees (locals) was entirely headed by senior engineer officers. All key positions (except Signal and Supply) initially were held by Engineers. Running Ports, Transportation (RR's and Motor Trans) Depots, Construction (for above normal Engr Troop Construction) never could have been attained without the background of big projects experienced in District and Division Engineer work. 27

Basically taught ability to size up a job and a willingness to make a decision. 29

Before and during World War II, I came in contact with a host of outstanding Engineer officers, in grades ranging up to Major General. Virtually all of them had had extensive experience in the Civil Works Program between World War I and II, to include the construction of massive dams, flood control structures and the like. In such capacities, they learned to manage enormous

and complicated projects, became initimately familiar with the operations and methodology of the US construction industry and acquired the aptitude to think big. That's what made these men such standouts all over the world between 1939 and 1945. 35

The opportunity for Corps of Engr officers to serve with relatively heavy responsibility on civil works assignments with both technical and management experience prepared them much more than comparable ranks in other services of the defense establishment. 32

Experience on large projects involving civilian construction helped allocation of tasks such as bridge building, road construction and maintenance to Engineer Troop Units. 33

For management as well as professional experience. 34

Working with large civilian organizations, contractors, civic groups, and labor unions increases capability to deal with war time army and foreigners, both military and civilian. 6

Heavy responsibilities at an early age. Extensive contact with civilians-constant professional challenge. 4

It was not only the professional and technical proficiency of these officers; they understood organizational structure; they were accustomed to working with people and to coping with heavy responsibilities; they were selflessly dedicated, and moved by a tremendous esprit. 3

Experience acquired in dealing with civilian contractors--and more important experience in organizing for large construction projects. 38

The fact that in district work you are responsible to finish jobs with an eye to costs--gives a much better background than does any pure training course. 39

Yes--they met men and learned methods and equipment they would have missed if all their service had been purely military. 40

Not only major contribution to their competence, but also provided senior engr officers personal knowledge of people in the engr-construction industry and in civil works organzation which facilitated setting up effective major construction organizations. 26

In COMZ, prior service was especially helpful to those assigned; in combat, troops, not as vital perhaps. 20

Due to his civil works experience, one officer was able to make the hydraulic calculation which resulted in the astonishing success of the crossing of the Roer River. 25

In almost every situation, the wartime assignment presented duty requirements to which district/division experience was directly transferable. 24

Modern war is largely logistics. Engineering is fundamental to logistics. We won the war quickly and decisively because we had learned to think "big," a result of large scale engineering, planning and construction. 23

6. In your opinion, did the ties that existed between the Corps districts and divisions and the remainder of the Army facilitate construction of the Continental United States mobilization base? (WW II)

Knowledge of Army organization and requirements possessed by both regular and reserve officers of corps of engineers on duty with District and Division officer to a high degree made possible the successful achievement of construction of CONUS mobilization ban. 33

I know from personal experience when the Corps of Engrs was called on to take over the construction div. of the QM Corps after their failure to carry that load. I personally was called on by GEN Somervell as one of those Corps of Engr. officers. I headed up the Engineering & Design Section. 32

Very little tie, but the expertise available was recognized by those who made the decision to turn the job over to the Corps. 29

Just prior to WW II and during it, districts built most new Army installations and additions thereto including the tremendous airfield construction program. My second tour on district work was in Seattle beginning in 1940. Our district not only had construction in US but also in the territory of Alaska including the network of airfields there extending way out the Aleutians. History shows how important these were. 27

Absolutely! I was assigned to the Office of the Engineer, Hawaiian Department (1939-1941). The Honolulu Engineer District was the agent for construction in the Islands and the Chain stretching to Australia. We developed the requirements; the District designed, organized and built. We were in constant contact and, more importantly, spoke the same military language. I am certain this experience was paralleled everywhere. The real point is that the Corps, by virtue of the talent bank of top flight engineer executives produced in the Civil Works

Program during the '20s and '30s, had qualified people to put into the engineer staffs of the major headquarters and the districts/divisions as well. What prompted the decision to transfer military construction in World War II from the QMG to COE? Where did the key executives (as opposed to scientists) in the Manhattan Project get their managerial expertise? Without the direct and indirect contributions of the Civil Side of the Corps of Engineers, I doubt if we would have made it in World War II. 35

GEN Somervell and his staff including many C of E officers did a tremendous job building the base and handling all phases of equipping the army. Tremendous part in production of atomic bomb. 10

It was certainly true that the construction of the continental US mobilization base was expedited by the ties that existed between the Corps districts and divisions and the remainder of the army. 7

Ability to understand military requirements both as to facilities and time phasing and interpret them for civilian contractors was imperative. 6

Military and contractual know-how were necessary to achieve maximum expedition. 1

It furnished the base necessary for expansion required to handle the wartime job. 38

Evident in Egnland, N. Africa, and on continent of Europe. 25

It was obvious that the construction supervision experience of engineer officers made possible the rapid and timely production of the mobilization facilities. 22

They did so vitally. For the existing and expert engineering construction and administrative organization was "overnight" in full swing and to study "how to do it" was not necessary. 20

Camps, hospitals, airfields, etc. in zone of the interior could not have been built otherwise in record time. 18

Definitely. Through wide acquaintance with reserve officers, professional engineers and contractors. C of E officers recognized as "real engineers" and not just "sappers." 17

District and Division Engr. Organizations, by their carefully planned distribution, provided "on the ground" timely coordination with other organizations to effect modification

in plans, schedules, and other vital matters; this enhanced composition and understanding, saved precious time, and materially bettered the end product. 16

The nation-wide and well-staffed CE peacetime structure provided a base-in-being for proceeding massively and almost instantly with "construction of the continental US mobilization base"; the C of E was able to go full-out at once--in a situation where time was of the essence. 3

Most of the district work in Norfolk district was building facilities for mob. base & regretably sea coast defense. Also Norfolk District directly supported North African division task force that staged through Norfolk by procuring supplies and packaging goods for them. 39

Very difficult to evaluate--but rubbing elbows taught each group something of value they would otherwise have missed. 40

10. Were you in a position to observe the technical performance of senior engineer officers? (Include yourself).

11. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

Traveling by air during my trips to Korea, I was able to observe many of the construction activities of the Engineers. I was impressed by the capabilities of the senior officers who had in most cases served in Engineer Districts or Divisions or both. 7

GEN Clay and McArthur were two of the greatest commanders of occupied enemy territories who ever lived in the history of warfare. 10

Although I did not serve in Korea the value of District service was most obvious where I was serving. 17

Those officers who had had district/division experience were far better equipped to handle their major logistics assignment. 25

It facilitated rapidly setting up task organizations of engineering and construction firms to accomplish urgently required construction, including highly specialized facilities. 26

R&H duty with balance of troop duty provides a broader degree of competence than one could get by either duty alone. 6

The Engineers I knew best--and they were outstanding--had all had experience in Districts/Divisions. To be sure, they benefited from the accomplishments and techniques of their colleagues during World War II, just a few years previously 5

12. In your opinion, did the ties that existed between the Corps districts and divisions and the remainder of the Army facilitate construction of the Continental United States mobilization base? (Korea)

From the start of World War II to my retirement (1954) there was never a time when the demand for officers with this experience did not exceed the supply. As Asst. Chief of Engineers one of our primary personal problems was to find ways to give more junior officers this experience. 17

In my opinion the task for the Korean War was much smaller than for World War II, however, I do believe the effort was undoubtedly helped by the ties which do exist between the Corps Districts and Divisions and the remainder of the Army. 7

In my own district--Mobile--it permitted instant application of major effort from experienced, knowledgeable personnel and organizations within the district's Civil Works responsibility to a running start in urgent military construction. Also facilitated our loan of an experienced team to help organize a new division for construction in offshore areas. 26

I observed this directly in 1950-2 in Tulsa, Okla. District where major district effort was smoothly swung from civil to military construction. 24

It was evident when we took over from the old COM and even present when we had to reactivate the closed station at the beginning of the WW. 25

That is not the only background which produces professional competence. 14

Would be a severe loss in value of the C of E to our military establishment in breadth of experience, technical education and international recognition as professional engineers. Loss of attractiveness for new engineer officers. 17

The Vietnam construction program was so big and diverse that only people who had had prior civil works experience could be effective at the top levels. From Group Commander on down such experience helped greatly but was not essential. 19

I personally observed hundreds of examples--in fact I do not recall any engineer officer with top or middle level responsibility who had not benefitted materially. 26

The ability to plan, orgn & admin a major constr prog was invaluable. 29

I observed many in senior grades in BI positions. It was apparent that their district/division experience contributed to their competence. 30

My responsibilities and those of my command were logistic in nature. My G-4 was an Engineer Officer and his knowledge of organization in supply came largely from his experience as a District Engineer. 33

18. In your opinion, whould the Civil Works Program of the US Army Corps of Engineers be retained under Department of the Army?

19. If no, what parts should be transferred?

Yes, for two reasons: (1) training of officers and (2) new life in periodically in what will be always a massive government organization for public works. 36

None--not only because of its value to our National Defense--but also because of the superior, honest, efficient and objectively managed performance by this dedicated Corps. 32

There should be better understanding between--C of E--Dept of Interior (flood control dams) and general public. 31

While basic planning could be separated there must still be a strong input from the Corps where they will ultimately have constr resp. 29

As I remarked under WW II, the experience of officers on district work gave training for large projects which otherwise could not have been obtained. In addition, many civilians in Divisions and Districts are reserve Engineers, very valuable on mobilization of civil works program was not in Corps. These civilians would not be in contact with Regulars and many would not be in Reserves. 27

Changing political considerations may require structural changes in the Civil Works organization. However, in the interest of national defense, the Chief of Engineers should continue major responsibilities in this field, i.e., participation in policy determinations, participation in fiscal determinations, participation in broad planning, design and engineering at project level, contract and construction supervision, operation and maintenance. 26

The experience engineer officers attain through supervision of all types of construction from Civil Works to military, provides the base that makes war time construction efficient. 22

If any part has to be transferred it should be the programming function and the defense of the budget, other than technical 19

None could be transferred without damage to the whole. 18

It is in the national interest for potential military leaders to acquire the perspective and judgment which accrue from association with and exposure to highly placed and high caliber civilian leaders of business, industry, and government. The Civil Works program is a highly effective mechanism for maintaining this relationship. 8

The Civil Works Program gives an opportunity to train Engineer Officers in peacetime for large construction activities needed in wartime and in war zones. 7

Who else and how else could it be done as effective-by-systems engineering at its best, developed in peacetime through practical experience. 4

Provides experience in large scale construction in both planning & conduct. Guards against over-politicalization of River & Harbor projects. 2

A "detail" system (service over two or three years with non-military organization) could be beneficial. I personnally felt that more actual construction (or survey work) and less administrative responsibility would have been more beneficial to us. 40

It provides an unequaled opportunity to develop leadership and management capabilities of officers during peacetime--and an opportunity to observe their performance and weed out those who should not be given high responsibility in wartime. 39

20. Have you ever served in a district?

21. If yes, was this tour of any value to you in your later service?

Many things I learned only in Districts I applied repeatedly in combat. Without this experience I would have been severely handicapped when made responsible for all military construction in Austria and Italy after D-Day. 17

It provided experience in all facets of engineering construction and administration of large contractual operations as well as detailed construction experience at a low level of responsibility. 20

Broad management and construction experience; opportunity to know and work with civilians; enhanced opportunity to learn of the world outside the Army. 24

The development of expertise in supervising construction is only attainable through actual experience. 22

Experience gained on major Civil Projects of great value in managing major military projects. 21

Gained knowledge of contracting, of design, and of construction, as well as considerable management experience. 15

Broadened my perspective and directly enhanced my qualifications for remaining 15 years of Army service in troop, staff, and construction assignments. 8

Experience in use of heavy equipment and organization of projects, command of work parties. 12

Because of the great amount of training and practical experience gained in many fields. 11

I gained practical experience in organizing and directing construction and other work of major magnitude, and in selecting and utilizing the necessary staff assistants. These experiences had invaluable application to engineer and logistics work in WW II. 16

Knowledge gained of contractual problems and capabilities of builders. 18

Technical experience in major operations (in contrast to comparatively minor military past activity). Experience of heavy responsibility over major construction forces and equipment--an essential prerequisite for preparation for high and important Engineer command under the massive stress and requirements of major war. 32

I learned more about organization of construction and maintenance task forces and cost accounting than I ever had before. I also found out a lot about working relationships between individuals uninfluenced by rank on either side. I learned of the tremendous capacity for achievement latent in our general contractor system, and I gained a knowledge of how to put it to work. 33

Both technical engrg experience & administrative experience in management. 37

For many reasons--experience, contacts, appreciation of large task. 36

Developed initiative and leadership. 5

It gave me experience in real construction, construction management as well as overall leadership. 25

It gave me experience on large projects which otherwise I could not have gotten in usual troop assignments. 27

I dealt with civilians at both higher and lower levels. Learned much about organizing a great variety of work: bidding, letting and paying both contracts and civilian personnel. It was a splendid school of learning for my later positions in the Budget and Legislative Division of the Army General Staff, Budget Officer for the War Department as the first Army Comptroller, as Inspector General of the US European Command and as the first Chief of MAAG France. I'm sure, from personal contact, that the Engineer training has assured the selection and superior performance of the Engineer Officers who have been Governors of the Panama Canal Zone. 28

Resp for major programs--plan, execute together with relationships with civ constr & engrg industry. 29

Administration & disbursing--knowledge of civil service employees--and some politics. 31

Heavy responsibility. Decisionmaking--broad civilian acquaintance. 4

It gave me an opportunity to develop my abilities to organize, direct and delegate work under conditions where cost, timely completion and quality work were required. Without my district experience I would have been ill prepared for my first troop command--CO of a US Regt in the combat zone. 39

I met people, saw equipment, and was involved in planning that helped me--but I felt that the time spent on administrative work (fiscal, purchasing, etc.) had little value insofar as military operations were concerned. 40

Experience acquired facilitated moving from Civil Engineer to District Engineer--and from $25M project to $1 1/2B project (atomic branch). Most of my pre-WW II service was on Civil Works or C of E technical education program. 38

Because of exposure to projects much more comprehensive than otherwise encountered by the military in peacetime--because of requirement early to assume major responsibility--because of advantage of civilian-military relationships in preparation for civilianized military in all-out war. 1

Experience in planning & conduct heavy const, in inspection of const; in fiscal & finanical factors; in relations with contractors; in general non-military management and leadership in labor relations. 2

****SUMMARY REPORT****
*** SURVEY OF CORPS OF ENGINEER OFFICERS 1974

QUESTION NUMBER 4

RESPONSE	FREQUENCY	%
1	40	97.6
2	1	2.4

TOTAL = 41
AVERAGE = 1.02
MEDIAN COEFFICIENT = 1.01
STANDARD DEVIATION = 0.16

QUESTION NUMBER 5

RESPONSE	FREQUENCY	%
1	31	77.5
2	8	20.0
3	1	2.5
4	0	0.
5	0	0.

TOTAL = 40
AVERAGE = 1.25
MEDIAN COEFFICIENT = 1.15
STANDARD DEVIATION = 0.49

QUESTION NUMBER 6

RESPONSE	FREQUENCY	%
1	28	84.8
2	3	9.1
3	2	6.1
4	0	0.
5	0	0.

TOTAL = 33
AVERAGE = 1.21
MEDIAN COEFFICIENT = 1.09
STANDARD DEVIATION = 0.55

QUESTION NUMBER 10

RESPONSE	FREQUENCY	%
1	22	81.5
2	5	18.5

TOTAL = 27
AVERAGE = 1.19
MEDIAN COEFFICIENT = 1.11
STANDARD DEVIATION = 0.40

RESPONSE TO SURVEY CONCERNING MILITARY VALUE OF CIVIL FUNCTIONS OF THE US ARMY CORPS OF ENGINEERS

US ARMY WAR COLLEGE
MAY 1974

****

4. Were you in a position to observe the technical performance of senior engineer officers? (Include yourself)

/1/ Yes /2/ No (Go on to Part B)

5. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

/1/ Major Contribution /2/ /3/ Some Contribution /4/ /5/ No Contribution /6/ No Comment

6. In your opinion, did the ties that existed between the Corps districts and divisions and the remainder of the Army facilitate construction of the Continental United States mobilization base?

/1/ Major Contribution /2/ /3/ Some Contribution /4/ /5/ No Contribution /6/ Don't know

10. Were you in a position to observe the technical performance of senior engineer officers? (Include yourself).

/1/ Yes /2/ No (Go on to Part C)

QUESTION NUMBER 11

RESPONSE	FREQUENCY	%
1	18	85.7
2	2	9.5
3	1	4.8
4	0	0.
5	0	0.

TOTAL = 21
AVERAGE = 1.19
MEDIAN COEFFICIENT = 1.08
STANDARD DEVIATION = 0.51

QUESTION NUMBER 12

RESPONSE	FREQUENCY	%
1	18	85.7
2	2	9.5
3	1	4.8
4	0	0.
5	0	0.

TOTAL = 21
AVERAGE = 1.19
MEDIAN COEFFICIENT = 1.08
STANDARD DEVIATION = 0.81

QUESTION NUMBER 16

RESPONSE	FREQUENCY	%
1	17	89.5
2	2	10.5

TOTAL = 19
AVERAGE = 1.11
MEDIAN COEFFICIENT = 1.06
STANDARD DEVIATION = 0.32

QUESTION NUMBER 17

RESPONSE	FREQUENCY	%
1	13	76.5
2	3	17.6
3	1	5.9
4	0	0.
5	0	0.

TOTAL = 17
AVERAGE = 1.29
MEDIAN COEFFICIENT = 1.15

11. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

1 Major Contribution — 2 — 3 Some Contribution — 4 — 5 No Contribution — 6 No Comment

12. In your opinion, do the ties that existed between the Corps districts and divisions and the remainder of the Army facilitate construction of the Continental United States mobilization base?

1 Major Contribution — 2 — 3 Some Contribution — 4 — 5 No Contribution — 6 No Comment

16. Were you in a position to observe the technical performance of senior officers? (Include yourself).

1 Yes 2 No (Go on to Part D)

17. In your opinion, did prior service (at any grade) by these officers in the district/division organization of the Corps of Engineers contribute to their professional competence?

1 Major Contribution — 2 — 3 Some Contribution — 4 — 5 No Contribution — 6 No Comment

STANDARD DEVIATION = 0.99

QUESTION NUMBER 18

RESPONSE	FREQUENCY	%
1	34	87.2
2	3	7.7
3	1	2.6
4	0	0.
5	1	2.6

TOTAL =	39
AVERAGE =	1.23
MEDIAN COEFFICIENT =	1.07
STANDARD DEVIATION =	0.74

QUESTION NUMBER 20

RESPONSE	FREQUENCY	%
1	37	94.9
2	2	5.1

TOTAL =	39
AVERAGE =	1.05
MEDIAN COEFFICIENT =	1.03
STANDARD DEVIATION =	0.22

QUESTION NUMBER 21

RESPONSE	FREQUENCY	%
1	35	92.1
2	2	5.3
3	1	2.6
4	0	0.
5	0	0.

TOTAL =	38
AVERAGE =	1.11
MEDIAN COEFFICIENT =	1.04
STANDARD DEVIATION =	0.39

QUESTION NUMBER 22

RESPONSE	FREQUENCY	%
1	18	21.4
2	18	21.4
3	14	16.7
4	17	20.2
5	15	17.9
6	2	2.4

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18. In your opinion, should the Civil Works Program of the US Army Corps of Engineers be retained under Department of the Army?

1 Strong Yes — 2 Yes — 3 Neutral — 4 No — 5 Strong No — 6 No Opinion

20. Have you ever served in a district?

1 Yes — 2 No

21. If yes, was this tour of any value to you in your later service?

1 Great Value — 2 — 3 Some Value — 4 — 5 No Value — 6

22. At what grade(s) was your district service?

1 LT — 2 CPT — 3 MAJ — 4 LTC — 5 COL — 6 No Service